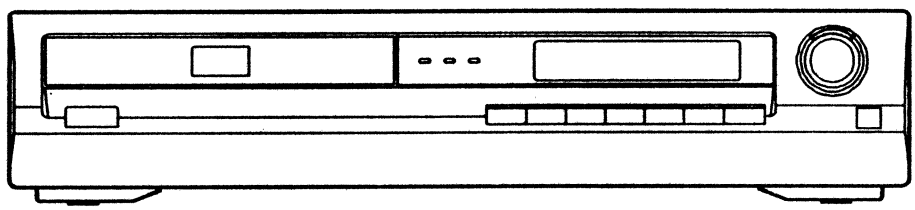
Service Manual

DVD HOME THEATRE SYSTEM



DV-R3100SS

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PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety characteristics. These safety characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by ⚠ in the schematic diagram and the parts list.

Before replacing any of these components, read the parts list in this manual carefully.

The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire or other hazards.

SPECIFICATIONS

Unit	
Power supply	AC 230V ~ 50Hz
Power consumption	116 W
Signal system	Standard PAL
Laser	Semiconductor laser, wavelength 650/780nm
Signal-to-noise	More than 95dB
Audio dynamic range	More than 93dB
Harmonic distortion	Less than 1%
Operating temperature	41°F to 95°F (+5°C to 35°C)
Operating humidity	5% to 85% (no condensation)
Video Output / Input	
Output level	1 Vp-p (75 Ω)
Input level	750mV input (5W 10% THD output)
Audio Output / Input	
Output level	1.80 ± 0.2 Vrms (1 kHz, 0dB)
Input level	750mV input (5W 10% THD output)
Jack	RCA/Pin jack
Speakers Section	
Speakers (Front/Center/Rear)	
Speaker system	Bass reflex
Speaker unit	70 mm dia. cone type
Rated impedance	8 ohms
Subwoofer Section	
Speaker system	Bass reflex
Speaker unit	180 mm dia. cone type
Rated impedance	4 ohms

Specifications and external appearance are subject to change without notice.

PERFORMANCE SPECIFICATIONS

GENERAL TEST CONDITION

Power Supply	:AC 230V ~ 50Hz
Output Load	:8 ohm Non-reactive x5 Subwoofer 6ohm x1
Reference Output	:500mW
Input Signal Source	:External AM Loop Antenna
	:75 ohm Dummy Antenna for FM
Modulation	:30% 400Hz for AM 60% for Power
	40kHz Deviation 1000Hz for FM
	7.5kHz Pilot Tone
	47.5kHz L+R 1000Hz

(AM) SECTION, AMPLITUDE, MODULATION

	TEST ITEMS		UNIT	NOMINAL	LIMIT
1.	Tuning Range		kHz	531-1602	-
2.	I.F.		kHz	450	±3
3.	S/N 10mV/m	999kHz	dB	36	30
4.	Sens. (at S/N 20dB)	603kHz	dB	60	64
			dB	60	64
		1404kHz	dB	60	64
5.	I.F. Rej.	603kHz	dB	50	46
6.	Image Rej.	1404kHz	dB	30	22
7.	Spurious Rejection		dB	35	25
8.	Bandwidth, -6dB, at (Max. Sens. +6dB)	999kHz	kHz	6	4 - 9
9.	ACA (±9 kHz) Input	999kHz	dB	20	15
10.	AGC Figure Merit	100mV/m	dB	45	40
11.	Distortion, 5mV/m, 30%		%	1	3
	80%		%	3	6
12.	a. 10% THD Power AC	DEV 80%	W	15	13
	b. woofer 10%	DEV 80%	W	25	22
13.	a. Tweet (2nd 910kHz & 3rd 1350kHz) at 75 dB I/P		dB	15	10
14.	Audio Fiedlity, Centre ±(6) dB		Hz	60/2200	120/2000
15.	Low Voltage AC		%	80	85
16.	a. Mod. Hum 10mV/M		dB	36	30
	b. Hum at Min. Vol.		mV	1	3
17.	Auto Stop Sens.		dB	64	70
18.	Step Frequency		kHz	-	9

REMARKS:

NOTE: All measurement should be done at bypass mode without EQ effects.

PERFORMANCE SPECIFICATIONS - CONTINUED

(FM) SECTION, FREQUENCY, MODULATION					
	TEST ITEMS		UNIT	NOMINAL	LIMIT
1.	Tuning Range		MHz	87.5 - 108	-
2.	I.F.		MHz	10.7	±0.3
3.	30dB S/N	90MHz	µV	20	25
		98MHz	µV	20	25
		106MHz	µV	20	25
4.	-3dB Limit Sens.		dB	16	30
5.	I.F. Rej.	98MHz	dB	60	50
6.	Image Rej.	106MHz	dB	30	23
7.	Spurious Rejection (Max. Sens. + 6dB)	(F+0.535MHz)	dB	40	35
8.	AM Suppression	(60dB I/P)	dB	45	30
9.	Mod. Hum	(60dB I/P)	dB	48	42
10.	Distortion at 1mV/m (Mono)	22.5kHz	%	1	2
	100mV/m	75kHz	%	3	5
11.	Audio Fidelity, (-3dB) (Pre-emphass) (50µS) (FR.FL) 30% 400Hz for AM 60% for Power		Hz	60/9000	120/6000
	SUBWOOFER		100 Hz	36	30
12.	Power Out, 10% THD (55K DEV) 1K=1mV		W	15	13
	Subwoofer Power out, 10% THD (55K DEV) 100Hz=1mV		W	25	22
13.	Low Voltage AC		%	80	85
14.	S/N Ratio at 1mV	98MHz	dB	52	46
15.	Alternate Channel Selective ±400 kHz		dB	25	18
16.	Stereo Separation		dB	26	22
17.	19kHz Leak Carrier		dB	32	27
18.	Stereo LED Indication		dB	26	30
19.	Step Frequency		kHz	-	100
20.	Auto Stop Sens.		dB	26	32
21.	Minimum VOL Hum		mV	1.0	3.0

REMARKS:

NOTE: All measurement should be done at bypass mode without EQ effects.

PERFORMANCE SPECIFICATIONS - CONTINUED

VIDEO SECTION					
	TEST ITEMS		UNIT	NOMINAL	LIMIT
1.	Signal Level (LT2-1)	Composite	V(pp)	1.0	±0.2
	75_{Ω} Terminated	S-Y	V(pp)	0.714	±0.2
	Oscilloscope	S-C (Burst)	V(pp)	0.286	±0.05
	75% Color Bar	Component-Y	V(pp)	0.714	±0.2
2.	Frequency Char. Composite	1.0 / 0.5MHz	dB	0	±2.0
	(LT2-1, REF=0dB 0.5MHz, L156 VM700A	2.0 / 0.5MHz	dB	0	±2.0
	Composite)	4.0 / 0.5MHz	dB	0	±2.5
		4.75 / 0.5MHz	dB	0	±2.5
		5.75 / 0.5MHz	dB	-2.0	+3-4
3.	Frequency Char. S-Y	1.0 / 0.5MHz	dB	0	±2.0
	(LT2-1, REF=0dB 0.5MHz, L156 VM700A	2.0 / 0.5MHz	dB	0	±2.0
	S-Y	4.0 / 0.5MHz	dB	0	±2.5
		4.75 / 0.5MHz	dB	0	±2.5
		5.75 / 0.5MHz	dB	-2.0	+3-4
4.	Composite Video-S/N	100K-4.2MHz	dB	60	50
	(LT2-1) One Line Only	(SC TR ON)			
	L131 VM700A				
5.	S-Y S/N (LT2-1 One Line Only)	100K-4.2MHz (SC TR ON)	60	60	50
6.	Color-AM Color-PM (One Lone Only)	100Hz -500kHz	dB		>40
	(LT2-1, L131 VM700A)		dB		>40

MW/FM STEREO & RDS TUNING WITH DVD PLAYER (for VDE)						
	FM STEREO & RDS SECTION 37.5kHz (MAIN+SUB 75kHz (PILOT) 1.2K (RDS) DEV & 1kHz INPUT			UNIT	NOR	LIMIT
1.	Stereo Separation 1mV Input	MOD FREQ 100Hz	L/R	dB	30	25
			R/L	dB	30	25
		MOD FREQ 1kHz	L/R	dB	30	25
			R/L	dB	30	25
		MOD FREQ 10kHz	L/R	dB	25	18
			R/L	dB	25	18
2.	Stereo On Sensitivity		98MHz	dB	5	<18
3.	S.N.C (SEP=10dB)		98MHz	dB	34	34±8
4.	RDS Indicatioor Sensitivity		98MHz	dB	28	<36
5.	RDS Seek Sensitivity		98MHz	dB	28	<36
6.	TA Indicator Sensitivity		98MHz	dB	28	<36
7.	TA Seek Sensitivity		98MHz	dB	28	<36

PERFORMANCE SPECIFICATIONS - CONTINUED

AMPLIFIER SECTION

	TEST ITEMS		UNIT	NOMINAL	LIMIT
1.	10% THD Power AC (FL, FR)		W	15	13
2.	Frequency Response (CT) 1K=0dB	20Hz	dB	-3	±3
		100Hz	dB	0	±3
		10kHz	dB	0	±3
		20kHz	dB	0	±6
3.	Frequency Response (RR, RL)	20Hz	dB	-3	±3
	1K=0dB	100Hz	dB	0	±3
		10kHz	dB	0	±3
		20kHz	dB	0	±5
4.	Frequency Response (FL, FR)	20Hz	dB	-3	±3
	1K=0dB	100Hz	dB	0	±3
		10kHz	dB	0	±3
		20kHz	dB	0	±3
5.	Frequency Response	20Hz	dB	40	35
	(Subwoofer) 1K=0dB	100Hz	dB	40	35
6.	10% THD Power AC (Subwoofer)		W	25	22
7.	Subwoofer THD (100Hz Ref O/P)		%	0.5	1.0
8.	THD (1kHz, Ref O/P) FR, FL		%	0.5	0.8
9.	Channel Unbalance (L&R)	1kHz	dB	±1	±3
10.	Minimum VOL Hum (UNWGTD/WGTD)		mV	1	3
11.	Maximum VOL Hum (UNWGTD/WGTD)		mV	8	15
12.	S/N (UNWGTD/CCIR-ARM2K) (L&R)	1kHz	dB	60	55
13.	Bass Effect FL, FR		dB	±10	±4
14.	Trebl Effect FL, FR		dB	±10	±4
15.	Middle Effect FL, FR		dB	±10	±4
16.	Separation (FL & FR)		dB	-	45
17.	Cross Talk For Input (AUX/CD-REF) W/BPF		dB	-	45

REMARKS:

Level Matching

CD -10dB	REF	
AM 55% 5mV/m		±3
FM 40KHz 1mV		±3
AUX IN 750mV		±3

NOTE: All measurement should be done at bypass mode without EQ effects.
Audio others :6ch
More audio prologic :on
ITEM 1.2.3.4 Set up subwoofer for off speaker for large.

PERFORMANCE SPECIFICATIONS - CONTINUED

AUX IN DOLBY PRO LOGIC SECTION

	TEST ITEMS		UNIT	NOMINAL	LIMIT
1.	10% THD Power AC (FL, FR)		W	15	13
2.	Frequency Response (CT) 1K=0dB	20Hz	dB	-3	±5
		100Hz	dB	0	±3
		10kHz	dB	0	±3
		20kHz	dB	0	±6
3.	Frequency Response (RR, RL)	20Hz	dB	-3	±5
	1K=0dB	100Hz	dB	0	±3
		10kHz	dB	0	±3
		20kHz	dB	0	±5
4.	Frequency Response (FL, FR)	20Hz	dB	-3	±5
	1K=0dB	100Hz	dB	0	±3
		10kHz	dB	0	±3
		20kHz	dB	0	±3
5.	Frequency Response	20Hz	dB	43	35
	(Subwoofer) 1K=0dB	100Hz	dB	43	35
6.	10% THD Power AC (Subwoofer)		W	25	22
7.	Subwoofer THD (100Hz Ref O/P)		%	0.5	1.0
8.	THD (1kHz, Ref O/P) FR, FL		%	0.1	0.5
9.	Channel Unbalance (L&R)	1kHz	dB	±1	±3
10.	Minimum VOL Hum (UNWGTD/WGTD)		mV	1	3
11.	Maximum VOL Hum (UNWGTD/WGTD)		mV	3	8
12.	S/N (UNWGTD/CCIR-ARM2K) (L&R)	1kHz	dB	60	55
13.	Separation (FL & FR)		dB	-	50

REMARKS:

NOTE: All measurement should be done at bypass mode without EQ effects.
More audio prologic : on
ITEM 1.2.3.4.Should be set up at DVD mode, and set subwoofer as off, speaker as large.

PERFORMANCE SPECIFICATIONS - CONTINUED

DVD AUDIO SECTION (LINE OUTPUT)					
	TEST ITEMS		UNIT	NOMINAL	LIMIT
1.	THD+N (LT2-1, 3-1 20kHz LPF ON)		%		0.015
2.	Output Level (LT2-1, 3-1)		V	2.0	±0.3
3.	S/N (LT2-1, 3-20 JIS-A FILTER ON)		dB	80	70
4.	Crosstalk (LT2-1, 3-21.22 1kHz, BPF ON)		dB		70
5.	Frequency Range				
	(48KHz / 24BIT) (LT2-1, 3-1~19)	31Hz	dB	0	±1.0
	(FL, FR)	499Hz	dB	0	±1.0
		1kHz	dB	0	±1.0
		10kHz	dB	0	±1.0
		22kHz	dB	0	±1.0
6.	Frequency Range	20Hz	dB	0	±3.0
	(96kHz / 24BIT LT2-1, 6-1~12)	400Hz	dB	0	±3.0
	(FL, FR)	1kHz	dB	0	±3.0
		12.8kHz	dB	0	±3.0
		20kHz	dB	0	±3.0
7.	Digital Output Level (LT2-1, 1-1 75_{Ω} LOADING ON)		mV	500	±100
8.	Dynamic Range		dB		85
9.	Black Band (TDV 545)		μM	-	600
10.	Finger Print		μM	-	No.10
11.	Eccentric (MDVD142 TEAC)		μM	-	200
12.	Vertical (MDVD151 TEAC)		mm	-	0.6
CD SECTION					
1.	Interruption (PHILIPS SBC444A)		μM	-	600
2.	Black Dot		μM	-	600
3.	Finger Print		μM	-	No.18
4.	Eccentric (TCO-712 ABEX)		μM	-	140
5.	Vertical (TCO-731R ABEX)		mm	-	0.8
CD-R SECTION					
1.	Black Band (TCD-R025W)		μM	800	600
2.	Finger Printers (TCD-R025W)		μM	-	65
3.	Scratch (TCD-R021W)		mm	1.8	1.6
4.	Eccentric (TCD-R012W)		μM	-	140
5.	Deviation (TCD-R032W)		μM	-	810
CD-RW SECTION					
1.	Black Band (TCD-W025W)		μM	600	500
2.	Finger Printers (TCD-W025W)		μM	-	65
3.	Scratch (TCD-W021W)		mm	-	1.0
4.	Eccentric (TCD-W012W)		μM	-	140
5.	Deviation (TCD-W032W)		μM	-	810

ELECTRICAL PARTS LIST

Ref. No.	Description	Mfr's Part No.	Qty.
PCB			
MAIN PCB	PCB STS21AAST-01-01 396x300x1.6mm/2 (94V0)	033-STS21A-200	1
DISPLAY PCB	PCB STS21AAST-01-03 202x174.5x1.6mm/4 (94HB)	033-STS21A-102	1
FUSE PCB	PCB STS21AAST-01-07 166x132x1.6mm/12 (94V0)	033-STS21A-106	1
MPEG+SERVO PCB	PCB STS21AAST-01-02 150x120x1.6mm (FR4)	033-STS21A-101	1
MOTOR DRIVER PCB	PCB STS21AAST-01-12 180x100x1.2mm/20 (94HB)	033-STS21A-110	1
LOAD MOTOR PCB	PCB STS21AAST-01-09 171x88.5x1.6mm/12 (94V0)	033-STS21A-108	1
SCART PCB	PCB STS21AAST-01-05 140x95x1.6mm/4 (94V0)	033-STS21A-104	1
BLANK PCB	PCB STS21AAST-01-08 197x46x1.6mm/9 (94V0)	033-STS21A-107	1
TUNER PCB	PCB STS21AAST-01-04 141x130x1.6mm/3 (94V0)	033-STS21A-103	1
MISCELLANEOUS			
	REMOTE CONTROL HANDSET RC54-48 (AKAI/DV-R3100SS/3300SS) w/SIL SPY (FOR STS25/61)	043-R15448-051	1
ACCESSORY PORTION			
WIRE			
	JP WIRE AWG26#UL1007 1500mm BLK CRIMPED w/TERMINAL SHS #STV8-TE AND TUBE (75ohm)	054-010A50-090	1
MISCELLANEOUS			
	AV CABLE 1.5M COAXIAL BK CABLE w/3 RCA PLUG RED,WHT,YEL #3C RCA&RCA-1500BK	122-004220-151	1
	BATTERY #GP15G 1.5V 'AA' SIZE (GP) MERCURY & CADMIUM FREE (2PCS/PACKAGE)	130-615004-001	2
	AM LOOP ANT.388-88 & 388-89 MOLD BK(ABS) 5264-2 2.54mm w/5750mm BK AWG26#UL1007	132-020388-882	1
MAIN PCB SECTION			
R603,611,612,613	RESISTOR 1 Kohm +-5% 1/16W (1/8W)	001-010251-016	4
R504,534,580,609	RESISTOR 10 Kohm +-5% 1/16W (1/8W)	001-010351-016	4
R656,657,664,666,668, 670,672,674	RESISTOR 100 Kohm +-5% 1/16W (1/8W)	001-010451-016	8
R660	RESISTOR 150 ohm +-5% 1/16W (1/8W)	001-015151-016	1
R608	RESISTOR 15 Kohm +-5% 1/16W (1/8W)	001-015351-016	1
R602,616,617,618,619, 624,625,628,629,634,635, 638,639,654	RESISTOR 2.2 Kohm +-5% 1/16W (1/8W)	001-022251-016	14
R606,607,614,615,626, 627,636,637,658,659	RESISTOR 22 Kohm +-5% 1/16W (1/8W)	001-022351-016	10
R620,621,630,631,640,641	RESISTOR 2.2 ohm +-5% 1/16W (1/8W)	001-022851-016	6
R622,623,632,633,642,643	RESISTOR 2.7 Kohm +-5% 1/16W (1/8W)	001-027251-016	6
R652,687,688	RESISTOR 27 Kohm +-5% 1/16W (1/8W)	001-027351-016	3
R661,675	RESISTOR 3.3 Kohm +-5% 1/16W (1/8W)	001-033251-016	2
R655	RESISTOR 33 Kohm +-5% 1/16W (1/8W)	001-033351-016	1
R535,536,605,683,684	RESISTOR 4.7 Kohm +-5% 1/16W (1/8W)	001-047251-016	5
R501,502,503,505,506, 601,681,682	RESISTOR 47 Kohm +-5% 1/16W (1/8W)	001-047351-016	8
R649	RESISTOR 56 ohm +-5% 1/16W (1/8W)	001-056051-016	1
R662,676	RESISTOR 6.2 Kohm +-5% 1/16W (1/8W)	001-062251-016	2
R650,651,677,678,679, 680,690	RESISTOR 6.8 Kohm +-5% 1/16W (1/8W)	001-068251-016	7
R507,508,509,510,511,512	RESISTOR 8.2 Kohm +-5% 1/16W (1/8W)	001-082251-016	6
R610	RESISTOR 1 Kohm +-5% 1/16W (1/8W)	001-010251-016	1
R517,518,523,524,533	RESISTOR 10 Kohm +-5% 1/16W (1/8W)	001-010351-016	5

ELECTRICAL PARTS LIST - CONTINUED

Ref. No.	Description	Mfr's Part No.	Qty.
R561,563	RESISTOR 100 Kohm +-5% 1/16W (1/8W)	001-010451-016	2
R646,647	RESISTOR 150 ohm +-5% 1/16W (1/8W)	001-015151-016	2
R539	RESISTOR 15 Kohm +-5% 1/16W (1/8W)	001-015351-016	1
R513,514,521,562	RESISTOR 22 Kohm +-5% 1/16W (1/8W)	001-022351-016	4
R525,526	RESISTOR 220 Kohm +-5% 1/16W (1/8W)	001-022451-016	2
R515,516,519,520	RESISTOR 27 Kohm +-5% 1/16W (1/8W)	001-027351-016	4
R527,528	RESISTOR 3.3 Kohm +-5% 1/16W (1/8W)	001-033251-016	2
R541	RESISTOR 33 Kohm +-5% 1/16W (1/8W)	001-033351-016	1
R529,530	RESISTOR 4.7 Kohm +-5% 1/16W (1/8W)	001-047251-016	2
R538	RESISTOR 47 Kohm +-5% 1/16W (1/8W)	001-047351-016	1
R537,540	RESISTOR 68K +-5% 1/16W (1/8W)	001-068351-016	2
R301,302,303,304,305, 306,307,308,309,316,318, 319,321,325,330,331,333, 334,337,338,339,343,344, 345,350,361,364,365,381, 382,383,384,385,386,387, 388	RESISTOR 10 Kohm +-5% 1/16W (1/8W)	001-010351-016	36
R348	RESISTOR 15 Kohm +-5% 1/16W (1/8W)	001-015351-016	1
R340	RESISTOR 20 Kohm +-5% 1/16W (1/8W)	001-020351-016	1
R313,314,315	RESISTOR 220 ohm +-5% 1/16W (1/8W)	001-022151-016	3
R341	RESISTOR 22 Kohm +-5% 1/16W (1/8W)	001-022351-016	1
R327	RESISTOR 2.7 Kohm +-5% 1/16W (1/8W)	001-027251-016	1
R332,335,336	RESISTOR 33 ohm +-5% 1/16W (1/8W)	001-033051-016	3
R326,328,390,391,560,564	RESISTOR 4.7 Kohm +-5% 1/16W (1/8W)	001-047251-016	6
R346,347	RESISTOR 47 Kohm +-5% 1/16W (1/8W)	001-047351-016	2
R342	RESISTOR 5.6 Kohm +-5% 1/16W (1/8W)	001-056251-016	1
R324	RESISTOR 8.2 Kohm +-5% 1/16W (1/8W)	001-082251-016	1
R884	RESISTOR 10 ohm,+-5%,1/4W	001-010050-014	1
R882,885,893,894,895	RESISTOR 100 Kohm +-5% 1/16W (1/8W)	001-010451-016	5
R889,890,891	RESISTOR 3.3 Kohm +-5% 1/16W (1/8W)	001-033251-016	3
R883,886	RESISTOR 4.7 Kohm +-5% 1/16W (1/8W)	001-047251-016	2
R367,368,369,375,376, 377,378	RESISTOR 100 ohm +-5% 1/16W (1/8W)	001-010151-016	7
1/R372-R379	RESISTOR 1 Kohm +-5% 1/16W (1/8W)	001-010251-016	1
R358	RESISTOR 10 Kohm +-5% 1/16W (1/8W)	001-010351-016	1
R354	RESISTOR 1.5K +-5% 1/16W (1/8W)	001-015251-016	1
R373	RESISTOR 220 ohm +-5% 1/16W (1/8W)	001-022151-016	1
R355	RESISTOR 2.2 Kohm +-5% 1/16W (1/8W)	001-022251-016	1
R353	RESISTOR 22 Kohm +-5% 1/16W (1/8W)	001-022351-016	1
R356	RESISTOR 3.3 Kohm +-5% 1/16W (1/8W)	001-033251-016	1
R359	RESISTOR 33 Kohm +-5% 1/16W (1/8W)	001-033351-016	1
R352	RESISTOR 4.7 Kohm +-5% 1/16W (1/8W)	001-047251-016	1
R351	RESISTOR 47 Kohm +-5% 1/16W (1/8W)	001-047351-016	1
R379	RESISTOR 51 Kohm +-5% 1/16W (1/8W)	001-051351-016	1
R357	RESISTOR 5.6 Kohm +-5% 1/16W (1/8W)	001-056251-016	1
R884	RESISTOR 10 ohm,+-5%,1/4W	001-010050-014	1
R811,828	RESISTOR 1 Kohm +-5% 1/16W (1/8W)	001-010251-016	2
[illegible]	[illegible]	[illegible]	[illegible]
819,830,843			
R807,820	RESISTOR 100 Kohm +-5% 1/16W (1/8W)	001-010451-016	2

ELECTRICAL PARTS LIST - CONTINUED

Ref. No.	Description	Mfr's Part No.	Qty.
R802,815,825,835	RESISTOR 220 ohm +-5% 1/16W (1/8W)	001-022151-016	4
R803,813,848	RESISTOR 22 Kohm +-5% 1/16W (1/8W)	001-022351-016	3
R823	RESISTOR 33 ohm +-5% 1/16W (1/8W)	001-033051-016	1
R829	RESISTOR 3.3 Kohm +-5% 1/16W (1/8W)	001-033251-016	1
R804,816,826,827	RESISTOR 470 ohm +-5% 1/16W (1/8W)	001-047151-016	4
R801,817	RESISTOR 4.7 Kohm +-5% 1/16W (1/8W)	001-047251-016	2
R821	RESISTOR 56 ohm +-5% 1/16W (1/8W)	001-056051-016	1
R809	RESISTOR 5.6 Kohm +-5% 1/16W (1/8W)	001-056251-016	1
R810	RESISTOR 680 ohm +-5% 1/16W (1/8W)	001-068151-016	1
CAPACITORS			
C647	CERAMIC CAP 100 pF/50V +-10%	003-010110-050	1
C584,659	CERAMIC CAP 0.02 uF/50V +80%-20%	003-020380-050	2
C893	CERAMIC CAP 0.04 uF/50V +80-20%	003-040380-050	1
C612,613,625,636,637	CERAMIC CAP 470 pF/50V +-10% TAPING (B TYPE/4mm)	003-047110-051	5
C660,680	*MYLAR CAP 0.01 uF/100V +-10%	004-010310-100	2
C618,619,630,631,642, 643,661,663,681,682	MYLAR CAP 0.1 uF/50V +-10%	004-010410-050	10
C662,679	MYLAR CAP 0.015 uF/100V +-5%	004-015350-100	2
C664,678	MYLAR CAP 0.0022 uF/100V +-10%	004-022210-100	2
C646	MYLAR CAP 0.033 uF/100V +-10%	004-033310-100	1
C624,648	MYLAR CAP 0.068 uF/100V +-10%	004-068310-100	2
C614,615,627,638,639, 644,645,666,668,669,670, 665,671,672,674,675,676, 684	ELECT CAP 1 MFD/50V +-20% (5x11)	006-001000-50D	18
C626,667,673,683,685	ELECT CAP 2.2 MFD/50V +-20% (5x11)	006-002000-50D	5
C677	ELECT CAP 10 MFD/50V +-20% (5x11)	006-010000-50D	1
C610,611,622,623,634, 635,650	ELECT CAP 100 MFD/16V +-20% (5x11)	006-010100-16D	7
C658	ELECT CAP 1000 MFD/16V +-20% (10x20)	006-010200-16D	1
C616,617,629,640,641	ELECT CAP 1000 MFD/25V +-20% (12.5x20)	006-010200-25D	5
C604	ELECT CAP 220 MFD/16V +-20% (6.3x11) (SA16V221M)	006-022101-16D	1
C628	ELECT CAP 2200 MFD/25V +-20% (16x25)	006-022200-25D	1
C601,602,603	ELECT CAP 2200 MFD/50V +-20% (16x31.5)	006-022200-50D	3
C605,606,607,608,609, 620,621,632,633,649	ELECT CAP 47 MFD/16V +-20% (5x11)	006-047000-16D	10
C501,502,511,512	CERAMIC CAP 100 pF/50V +-10%	003-010110-050	4
C523,524	MYLAR CAP 0.033 uF/100V +-5%	004-033350-100	2
C521,522	MYLAR CAP 0.068 uF/100V +-5%	004-068350-100	2
C503,504,505,506,507, 508,513,514,515,516,525, 517,518,519,520	ELECT CAP 4.7 MFD/50V +-20% (5x11)	006-004000-50D	15
C654,655	ELECT CAP 100 MFD/16V +-20% (5x11)	006-010100-16D	2
C509	ELECT CAP 47 MFD/16V +-20% (5x11)	006-047000-16D	1
C302	CERAMIC CAP 0.02 uF/50V +80%-20%	003-020380-050	1
C307,308	CERAMIC CAP 68 pF/50V +-10%	003-068010-050	2
C305,306	CERAMIC CAP 30 pF/50V +-5% (NPO) (CC45-CH1H300J/RBU04CH300J-L)	003-430050-050	2
C315	ELECT CAP 22 MFD/25V +-20% (5x11)	006-022000-25D	1

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ELECTRICAL PARTS LIST - CONTINUED

Ref. No.	Description	Mfr's Part No.	Qty.
C309	(F006-010000-16C) ELECT CAP 10 MFD/50V +-20% (VX/5x11)	006-010000-50C	1
C301	ELECT CAP 47000 MFD/5.5V DC +80-20% (STAR CAP) (SC-DA5R5 473 H)	006-747300-05C	1
C881,882,883,884,886	ELECT CAP 10 MFD/50V +-20% (5x11)	006-010000-50D	5
C310	ELECT CAP 47 MFD/10V +-20% (SMALL SIZE) (5x7)	006-147000-10D	1
C815,816	CERAMIC CAP 0.1 uF/16V +80%-20%	003-010480-016	2
C801,802,803,804,805, 806,807,808,810,812,814, 818,821,829,831,833,835, 837,845	CERAMIC CAP 0.02 uF/50V +80%-20%	003-020380-050	19
C842	MYLAR CAP 0.1 uF/50V +-10%	004-010410-050	1
C827,848	(F006-010000-16C) ELECT CAP 10 MFD/50V +-20% (VX/5x11)	006-010000-50C	2
C843,844,847,850	ELECT CAP 10 MFD/50V +-20% (5x11)	006-010000-50D	4
C817	ELECT CAP 100 MFD/16V +-20% (5x11)	006-010100-16D	1
C813,865	ELECT CAP 100 MFD/35V +-20%(8x11.5)	006-010100-35D	2
C849	ELECT CAP 1000 MFD/10V +-20%(10x16)	006-010200-10D	1
C820,832,836,839	ELECT CAP 220 MFD/16V +-20%(8x11.5)	006-022100-16D	4
C834	ELECT CAP 220 MFD/25V +-20%(8x11.5)	006-022100-25D	1
C830	ELECT CAP 2200 MFD/10V +-20% (VX/12.5x20)	006-022200-10C	1
C807,825	ELECT CAP 2200 MFD/16V +-20% (12.5x25)	006-022200-16D	2
C811	ELECT CAP 3300 MFD/25V +-20% (16x31.5)	006-033200-25D	1
C841	ELECT CAP 3300 MFD/50V +-20% (20x40)	006-033200-50D	1
C819	ELECT CAP 47 MFD/16V +-20% (5x11)	006-047000-16D	1
C828,838,846,855	ELECT CAP 470 MFD/10V +-20% (8x11.5)	006-047100-10D	4
TRANSISTORS			
Q602,606,607,608,609, 610,611,613	TRLNPNSST-TAP&TO-092 3DG1815	008-618150-000	8
Q603	TR PNPGEN-TAP&SC-072 DTA123ESA (ROHM) (88-WA2-662-08)	008-800123-003	1
Q601	TR NPNSST-RAD&SC-072 DTC114ES (ROHM)	008-801141-000	1
Q615	TR NPNSST-RAD&SC-072 DTA114TS/A (ROHM) KRA-111M (KEC)	008-801142-000	1
Q501,502,612	TRLNPNSST-TAP&TO-092 3DG1815	008-618150-000	3
Q604	TRLPNPPWR-TAP&TO-092 3CA8550	008-685500-000	1
Q605	TR NPNSST-RAD&SC-072 DTC114ES (ROHM)	008-801141-000	1
Q301	TR NPNSST-&&&&&&-&&& 3DG1417	008-601417-000	1
Q302	TR NPNSST-RAD&SC-072 DTC114ES (ROHM)	008-801141-000	1
Q852	TRLNPNSST-TAP&TO-092 3DG1815	008-618150-000	1
Q851	TRLPNPPWR-TAP&TO-092 3CA8550	008-685500-000	1
Q806,814	(F008-211850-005) TRANSISTOR 2SB1566E/F (ROHM)	008-201566-000	2
Q807,815	TRLPNPSST-TAP&TO-092 3CG1015	008-610150-000	2
Q801,805,813	TRLNPNSST-TAP&TO-092 3DG1815	008-618150-000	3
Q808	TRLNPNPWR-TAP&TO-092 3DA8050	008-680500-000	1
Q809	TRLPNPPWR-TAP&TO-092 3CA8550	008-685500-000	1
Q804,812	TR PNPGEN-TAP&SC-072 DTA123ESA (ROHM) (88-WA2-662-08)	008-800123-003	2
Q802,803,811	TR NPNSST-RAD&SC-072 DTC114ES (ROHM)	008-801141-000	3
INTEGRATED CIRCUITS			

ELECTRICAL PARTS LIST - CONTINUED

Ref. No.	Description	Mfr's Part No.	Qty.
IC801	(F010-207805-001) TR &&&VOL-REG&TO-092 LM78L05ACZ 5V VOLTAGE REGULATOR	008-V07805-000	1
IC605	ICAUDIOLEVELSENSOR PT2322-S(SOP) 6-CHANNEL AUDIO PROCESSOR (ANGUS)	010-142322-000	1
IC604	IC NJM-4558D, JRC O.AMP	010-274558-000	1
IC601,602,603	ICAMP-POWR-&&-&&&&&W TA8258H (TOSHIBA)	010-838258-000	3
IC502,506	IC BA4558N O.AMP	010-404558-000	2
IC302	IC 74HC373(SOL)/SN74HC373D/DW TC74HC373AF	010-070373-000	1
IC301	ICMCU-48K-LCD TMP87EP26F-3D72 (ALDIAUS-DVD32) FLASH MCU	010-918726-000	1
IC304	ICDISPLAYDRIVER-VFD PT6311/PT6318 (ANGUS) TP6311Q	010-146311-001	1
IC802,803	ICREGULA-P-005V001A BA05ST (ROHM)	010-400005-002	2
DIODES			
D601,602,603,604,605, 606,607,608	DIODE IN-4148 ROHM/TELEFUNKEN TAP**50 KEL(NS)(TAP:52mm)/NS(FAIRCHILD)/SEMTECH	011-004148-000	8
D301,302,303,304 JP344	DIODE IN-4148 ROHM/TELEFUNKEN TAP**50 KEL(NS)(TAP:52mm)/NS(FAIRCHILD)/SEMTECH	011-004148-000	5
D881,882,883	DIODE IN-4148 ROHM/TELEFUNKEN TAP**50 KEL(NS)(TAP:52mm)/NS(FAIRCHILD)/SEMTECH	011-004148-000	3
D810,811,815,816,817, 818,821,822,823,885	DIODE IN-4148 ROHM/TELEFUNKEN TAP**50 KEL(NS)(TAP:52mm)/NS(FAIRCHILD)/SEMTECH	011-004148-000	10
DZ804,806	ZENER DIODE MTZJT-72-12B 12V 1/2W (TSB#G51421015104)	011-010012-120	2
DZ801	ZENER DIODE #MTZJT-7224D 24V 1/2W	011-010024-120	1
DZ802	ZENER IN-5231B,HZ5C1,5.1V,1/2W	011-010051-120	1
DZ807	ZENER DIODE 6.2V #MTZJ6.2C	011-010062-005	1
DZ803	ZENER DIODE 10V #MTZJ10D 1/2W (ROHM)	011-010100-122	1
D887	RECTIFIER HER102	011-020102-000	1
D825	BRIDGE RECTIFIER RS602 (GOODWORK)	011-020602-001	1
D818,809,819,820,824	RECTIFIER IN-4001B	011-024001-000	5
D801,802,803,804	(F011-005401-000) RECTIFIER IN-5401BL	011-025401-000	4
D805,806,807,808	RECTIFIER IN5822	011-025822-000	4
INDUCTORS			
L601	INDUCTOR 47uH CEC-470K/708032 +-10% LAL03 TB 470K	018-010476-000	1
FB501,502,503	FERRITE BEAD INDUCTOR #BL01RN1-A62 0.45 uH/7A (5x3.6mm) (87-008-372-01)	032-101162-000	3
L603,605,609,612,613,615	TOROIDAL COIL T953628/TX2409033628 LEAD WIRE 18mm	037-953628-261	6
WH806	FERRITE CORE R0002-M191812100AF3 T18x12x10 OD:18mm,ID:10mm,T:12mm	032-219181-000	1
J5,6, J2 AND J3 AND WH803	FERRITE CORE FYE-T-062/T25x15x10 OD:25mm,ID:15mm,T:10mm	032-225015-010	3
L881	INDUCTOR 47uH CEC-470K/708032 +-10% LAL03 TB 470K	018-010476-000	1
L801,802,803,804	INDUCTOR 3.3 uH +-20% DIA:7x10mm WIRE:DIA=0.6mm (R0002-CW68-3R3M-852243)	018-010337-300	4
L805	INDUCTOR 47uH CEC-470K/708032 +-10% LAL03 TB 470K	018-010476-000	1

ELECTRICAL PARTS LIST - CONTINUED

Ref. No.	Description	Mfr's Part No.	Qty.
J11	FERRITE CORE #B29 FPL 40x10x6.5mm	032-240010-065	1
RESONATOR			
CX301	CERAMIC RESONATOR 8 MHz CSA 8.00 MTZ (MURATA) (87-A70-120-08C)	020-000800-000	1
SWITCHES			
SW308,309	TACT SWITCH 4P 3.85mm 100G #1102VA-4 (=021-KHH913-000)	021-110200-000	2
SW301,302,303,304,305, 306,307	TACT SWITCH 4P 5mm 100G #1102A-4/ EVQ PAC 05R (=021-KHH901-000)	021-110200-002	7
	PUSH SWITCH 2P2T PS3-22SP-W4CW-3.2 w/UL,VDE SEMKO APPROVAL (LUP FUNG)	021-032222-000	1
SW501	SLIDE SW 1P2T SS12F47G9	025-120091-003	1
WIRES			
	FFC CABLE 22 PINS L=108mm 4+100+4 P:1mm UL2896 0.035x0.7	040-220108-100	1
TH3 TO TH4	JP WIRE AWG22#1007 5x5mm 90mm BLACK	051-275090-009	1
JK502GND TO JK506GND	JP WIRE AWG26#1007 3x3mm 60mm BLACK	051-673060-009	1
TH1	JP WIRE AWG26#1007 5x5mm 100mm RED	051-675100-006	1
TH2 TH9 TO TH10	JP WIRE AWG26#1007 5x5mm 100mm BLACK	051-675100-009	2
TH15 TO JK502GND	JP WIRE AWG26#1007 5x5mm 220mm BLACK	051-675220-009	1
WH303	HSG(2.5mm)MOLEX 5264-06 TO JST 6P-SAN w/160mm R,BK,YEL,O,GR,BL AWG28#UL1007	136-JZ0616-000	1
WH802	HSG 3CD4-3A JST PHR 2mm w/330mm RED,BLK, WHT AWG28#UL1571 SLDG 5mm	136-033CD4-200	1
WH310	HSG VCD30D-4A JST PHR-04 w/150mm BLK,BRN,RED,ORG AWG28#UL1007 SLDG 3mm	136-04V30D-200	1
WH306	HSG CD363-10D PIN JST PHR w/150mm R,BK,W, Y,BL,O,R,BK,W,Y JP AWG28#1095 SLDG 5mm	136-100363-203	1
HEATSINK TO CAB	JP WIRE AWG26#1007 3x3mm 60mm BLACK	051-673060-009	1
WH801	HSG(2.5mm)MOLEX 5264-09 TO JST 9P-SCN w/220mm RED,GREYx8 AWG24#UL1007	136-J00922-000	1
WH807	HSG(2.5mm)PEC 2507H-08 TO PEC 2501H-08 w/120mm RED,BLACKx7 AWG22#UL1007	136-J10812-000	1
TO SW801	HSG(3.5mm)MOLEX 51067-0300 w/230mm BLK,NC,WHT AWG18#UL1672 SLDG.12mm	136-L00323-000	1
	HSG(3.96mm) YS TJ6-2Y w/150mm RED,BLACK AWG22#UL1007 SLDG 4mm	136-MZ0215-000	1
MISCELLANEOUS			
SPK801,602,603	4 P PUSH TERMINAL BOARD HSP-354V-05 MSP-354V-05 PBSN A,C-BLK B,D-RED(STS2x)	118-000354-001	3
JK502	PIN JACK BOARD MSP-244V1-34 NI YEL,ORN,WHT,RED	118-020244-000	1
JK503	DIN JACK HDC-056 (KUNMING)	119-000056-000	1
RTM801 ⚠	THERMISTOR T5D410K45JBPDA-0/100KD-5K	124-205410-001	1
WH501	FFC CONN 6232 22 PINS w/o LOCK PITCH:1mm 00 6232 022 006 800 VERTICAL TYPE	135-006232-220	1
JK506 TO REAR PANEL	SOLDERING LUG	137-300000-000	1
JK506	PIN JACK HSP-253V-14 (KUNMING) YELLOW,RED,WHITE/BODY WHITE	118-020253-000	1
RL504 ⚠	RELAY 12V 200mW ME-1-12BS 1P2T	128-120112-001	1
RL501 ⚠	RELAY 12V 200mW ME-2-12 2P2T	128-120212-001	1

ELECTRICAL PARTS LIST - CONTINUED

Ref. No.	Description	Mfr's Part No.	Qty.
WH304	HEADER CTL 10 PINS PHS-10 PITCH 2mm STRAIGHT TYPE WHT COLOR (MARKING:HR)	135-PHS100-100	1
	COOLING FAN DC12V DC BRUSHLESS #MW-510H12S-3 50x50x10mm	100-090012-003	1
WH806	HEADER 3 PINS PEC #2001-WS-3 PITCH 2mm VERTICAL REPLACE:135-PHS030-030	135-2001WS-030	1
LED302,303,304	LED-G-2X5M-N-&&&-&&& SE-6221AT 2x5mm GREEN, 21mm LEAD	110-003421-205	3
LED301	LED-B-5MM&-S-STP-&&& W05315BSC-3T/ W05310BSC-V 5mm SUPER BRIGHT BLUE	110-053152-005	1
SR301	REMOTE/CONTROL PHOTO RECEIVER Rohm/ RPM638CBRL/676/6938/-V4(FORMING TYPE)	111-000638-000	1
	VFD-2COL100x20.5SM-033P VACUUM FLUORESCENT DISPLAY #VFD20-1002 (ZEC)	115-001002-000	1
WH301	HEADER CTL 10 PINS PHS-10 PITCH 2mm STRAIGHT TYPE WHT COLOR (MARKING:HR)	135-PHS100-100	1
	SOLDERING LUG	137-300000-000	2
⚠	PT003WEI35/14&&&WEN& 230V:12.4V EN STD w/o FUSE (P3512-A14E)	123-A33032-100	1
⚠	PT090WEI66/62&F&BEN& 230V:27V/8V/13V/ 22V/4.2V w/FUSE 130C (L6662-S01E)	123-E33551-500	1
F804,805 ⚠	MICRO FUSE #251.630 630mA/125V WFF-215.630	124-006310-000	2
FS802,803 ⚠	FUSE #S5.6 2.5A/250V 5x20mm TIME LAG (CUL/VDE/SEMKO/BSI APP.)	124-025020-001	2
FS801 ⚠	FUSE #21806.3 6.3A/250V 5x20mm TIME LAG (CUL/SEMKO/VDE/BSI)	124-063020-001	1
⚠	RELAY 9V SDT-S-109LMR	128-090109-000	1
⚠	PLA-ULN-6.5'&-VDE-MG VDE APP.CORD 6.5' MIGRATION (HARVEST)	134-B11331-006	1
	HEADER 2 PINS #TJ6-2A PITCH:3.96mm VERTICAL 1.14mm AQURE PIN	135-000TJ6-020	1
	PIN HEADER 2 PINS TJC8-02P3 PITCH:7.92mm VERTICAL 1.14mm SQUARE PIN	135-00TJC8-020	1
SW801	HEADER MOLEX 2 PINS 53265-0210 V PITCH 7mm (87-099-623-01)	135-053265-020	1
WH805	HEADER 8 PINS PEC #2507-WS-8 PITCH 2.5mm VERTICAL REPLACE:135-005267-080	135-2507WS-080	1
WH803	HEADER CTL 4 PINS PHS-04 PITCH 2mm STRAIGHT TYPE WHT COLOR (MARKING:HR)	135-PHS040-040	1
MPEG+SERVO PORTION			
RESISTORS			
R14,29,39,58,100,101,120, 153,177,227,229,234,236, 237,241,243, FB18,19,20	CHIP RESISTOR 0 ohm +-5% 1/16W (0603/1608)	001-300052-016	19
R10,12,230	CHIP RESISTOR 10 ohm +-5% 1/16W (0603/1608)	001-310052-016	3
R9,11,97,106,107,122,134, 135,232	CHIP RESISTOR 1 Kohm +-5% 1/16W (0603/1608)	001-310252-016	9
R5,6,19,20,21,22,23,56,95, 102,123,124,126,130,131, 141,142,143,144,145,146, 147,148,157,163,200	CHIP RESISTOR 10 Kohm +-5% 1/16W (0603/1608)	001-310352-016	26

ELECTRICAL PARTS LIST - CONTINUED

Ref. No.	Description	Mfr's Part No.	Qty.
R1,109,132	CHIP RESISTOR 100 ohm +-5% 1/16W (0603/1608)	001-310152-016	3
R31,47,48,91,94,201,202, 203,204	CHIP RESISTOR 100 Kohm +-5% 1/16W (0603/1608)	001-310452-016	9
R32,33,34,35	CHIP RESISTOR 1 ohm +-5% 1/16W (0603/1608)	001-310852-016	4
R180,183,188,191,194,197	CHIP RESISTOR 12 Kohm +-5% 1/16W (0603/1608)	001-312352-016	6
R125,218,219	CHIP RESISTOR 180 ohm +-5% 1/16W (0603/1608)	001-318152-016	3
R208,209,212,213,216,217	CHIP RESISTOR 2 Kohm +-5% 1/16W (0603/1608)	001-320252-016	6
R164	CHIP RESISTOR 22 ohm +-5% 1/16W (0603/1608)	001-322052-016	1
R15,16,206,207,210,211, 214,215	CHIP RESISTOR 220 ohm +-5% 1/16W (0603/1608)	001-322152-016	8
R223	CHIP RESISTOR 2.2 Kohm +-5% 1/16W (0603/1608)	001-322252-016	1
R24,25,26,30,50,105	CHIP RESISTOR 22 Kohm +-5% 1/16W (0603/1608)	001-322352-016	6
R231	CHIP RESISTOR 2.4 Kohm +-5% 1/16W (0603/1608)	001-324252-016	1
R182,185,190,193,196,199	CHIP RESISTOR 30 Kohm +-1% 1/16W (0603/1608)	001-330312-016	6
R59,65,66,67,68,69,70,71, 73,74,75,77,79,80,110,111, 127,128,165,166,167,168, 169,170,171,175	CHIP RESISTOR 33 ohm +-5% 1/16W (0603/1608)	001-333052-016	26
R129,224	CHIP RESISTOR 330 ohm +-5% 1/16W (0603/1608)	001-333152-016	2
R3,4,52,53,54,55,60,181, 184,189,192,195,198	CHIP RESISTOR 3.3 Kohm +-5% 1/16W (0603/1608)	001-333252-016	13
R155	CHIP RESISTOR 392 ohm +-1% 1/16W (0603/16080	001-339112-016	1
R13,205	CHIP RESISTOR 470 ohm +-5% 1/16W (0603/1608)	001-347152-016	2
R17,18,43,45,61,96,104, 112,113,114,115,116,117, 118,119,133,139,140,174	CHIP RESISTOR 4.7 Kohm +-5% 1/16W (0603/1608)	001-347252-016	19
R27,51,57,76,93,98,137, 138,154	CHIP RESISTOR 47 Kohm +-5% 1/16W (0603/1608) (MCR03EZHJ-473)	001-347352-016	9
R222	CHIP RESISTOR 470 Kohm +-5% 1/16W (0603/1608)	001-347452-016	1
R136	CHIP RESISTOR 5.6 Kohm +-5% 1/16W (0603/1608)	001-356252-016	1
R186,187	CHIP RESISTOR 68 ohm +-5% 1/16W (0603/1608) (TSB#G5101100Y101)	001-368052-016	2
R158,159,160,161	CHIP RESISTOR 75 ohm +-1% 1/16W (0603/1608) (TSB#G5101104G105)	001-375012-016	4
R149,162	CHIP RESISTOR 75 ohm +-5% 1/16W (0603/1608)	001-375052-016	2
R8	CHIP RESISTOR 8.2 Kohm +-5% 1/16W (0603/1608)	001-382252-016	1
R225	CHIP RESISTOR 91 ohm +-5% 1/16W (0603/1608)	001-391052-016	1
CAPACITORS			
C11,16,39,44,52,53	CHIP CAP 0.001 uF/25V +-10% (0603/1608) (GRM39B102K50) (MURATA)	003-510212-025	6
C112	CHIP CAP 0.01 uF/25V +-10% (0603/1608) (MCH185C103KK/GRM39X7R103K25PT)	003-510312-025	1
C135,137,141,143,147,149	CHIP CAP 0.0022 uF/50V +-10% (0603/1608) (UMK107B222KZ-TM)	003-522212-050	6
C66	CHIP CAP 0.022 uF/25V +-10% (0603/1608) (MCH182C223KK/GRM39X7R223K25PT)	003-522312-025	1
C83	CHIP CAP 0.22 uF/16V +80-20% (0603/1608)	003-522482-016	1
C144	CHIP CAP 0.033 uF/25V +-10% (0603/1608)	003-533312-025	1
C17,47	CHIP CAP 0.047 uF/25V +-10% (0603/1608)	003-547312-025	2
C48	CHIP CAP 0.47 uF/16V +80-20% (0603/1608) (EMK107F474ZA)	003-547482-016	1

ELECTRICAL PARTS LIST - CONTINUED

Ref. No.	Description	Mfr's Part No.	Qty.
C2,8,9,10,14,15,21,22,23, 24,25,26,27,28,29,30,31, 32,33,34,35,36,37,38,40, 41,42,43,49,50,51,54,55, 56,59,62,63,64,65,68,69, 71,72,73,74,75,78,79,80, 82,84,85,86,87,92,95,96, 97,98,99,100,101,102,103, 104,105,106,106,107,108, 113,114,115,117,118,119, 120,121,122,123,124,128, 129,130,133,134,139,140, 145,146,151,152,153,166, 171	CHIP CAP 0.1 uF/16V +-10% (0603/1608) (87-A10-260-08G) (C1608JB1C104K) (TDK)	003-510412-016	94
C1,4,5,6,7	CHIP CAP 680 pF/50V +-10% (0603/1608)	003-568112-050	5
C12	CHIP CAP 0.0068 uF/50V +-10% (0603/1608)	003-568212-050	1
C3,13,131,132	(F003-610112-050) CHIP CAP 100 pF/50V +-5% NPO (0603/1608)	003-610152-050	4
C57,58,67	CHIP CAP 12 pF/50V +-5% NPO (0603/1608)	003-612052-050	3
C136,138,142,148,150	CHIP CAP 150 pF/50V +-5% NPO (0603/1608) (GRM39COG151J50PT/MCH185A151JK)	003-615152-050	5
C88,89,90,91,116,156,159, 162,165	(F003-622051-050) CHIP CAP 22 pF/50V +-5% NPO (0603/1608) (GRM39C0G220J50PT)	003-622052-050	9
C111	CHIP CAP 220 pF/50V +-5% NPO (0603/1608) (UMK107CH221JZ-T)	003-622152-050	1
C109,110	(F003-527012-050) CHIP CAP 27 pF/50V +-5% NPO (0603/1608) (UMK107CH270JZ-TM)	003-627052-050	2
C154,157,160,163	CHIP CAP 270 pF/50V +-5% NPO (0603/1608)	003-627152-050	4
R2	CHIP CAP 33 pF/50V +-5% NPO (0603/1608) (GRM39COG330J50PT/MCH185A330JK)	003-633052-050	1
C155,158,161,164	(F003-633151-050) CHIP CAP 330 pF/50V +-5% NPO (0603/1608) (GRM39C0G331J50PT)	003-633152-050	4
C70	CHIP CAP 47 pF/50V +-5% NPO (0603/1608)	003-647052-050	1
C45 ,46	CHIP CAP 470 pF/50V +-5% NPO (0603/1608)	003-647152-050	2
CE39,40	ELECT CAP 4.7 MFD/50V +-20% (5x11)	006-004000-50D	2
CE13,18,22,24,25,26,29, 30,31,32,33,34,35,36,37,38	ELECT CAP 10 MFD/50V +-20% (5x11)	006-010000-50D	16
CE5 ,6,27,28,45	ELECT CAP 100 MFD/16V +-20% (5x11)	006-010100-16D	5
CE16	ELECT CAP 1000 MFD/10V +-20% (VX/10x12)	006-010200-10C	1
CE41	ELECT CAP 220 MFD/16V +-20% (6.3x11) (SA16V221M)	006-022101-16D	1
CE3,15 ,42,44	ELECT CAP 47 MFD/25V +-20% (5x11)	006-047000-25D	4
CE14	ELECT CAP 470 MFD/10V +-20% (8x11.5)	006-047100-10D	1
CE4,8	ELECT CAP 470 MFD/16V +-20% (VX/10x12.5)	006-047100-16C	2
CE49,51,52,53,54	ELECT CAP 100 MFD/6.3V +-20% (SMALL SIZE) (5x7)	006-210100-06D	5
TRANSISTORS			
Q4,7,8,9,10,11,12	TR NPNGEN-BUK&SC-043 2N3904	008-939040-000	7
Q5,6	TR NPNGEN-BUK&SC-043 2N3906	008-939060-000	2
Q3	CHIP TRANSISTOR DTC124TKA-TLB	008-A00124-B00	1
Q1,2	TR PNPPWR-TAP&&S-MT& 2SB1197K-T146R (SMT) (ROHM)	008-A01197-000	2

ELECTRICAL PARTS LIST - CONTINUED

Ref. No.	Description	Mfr's Part No.	Qty.
INTEGRATED CIRCUITS			
U7	ICMCU-512K-NIL W29EE512P-70 (WINBOND)	010-032951-001	1
U25	ICSPECIAL WM8739EDS 24BIT 96kHz STEREO	010-038739-000	1
	AUDIO ADC		
U31	ICSPECIAL WM8746EDS 32BIT 192KHz 6CH DAC	010-038746-000	1
	w/VOLUME CONTROL		
U9	IC-VOLTAGE REGULATOR XC61AN1902MR/	010-151902-000	1
	XC61CN1902MR		
U1	IC-RF AMP M5703T(SP3721AAA-OPM)	010-245703-000	1
	(64-PIN VQFP)		
U5	IC&&&&&&&&&&&&&&&& M5705 DVD-ROM	010-245705-000	1
	CONTROLLER (176-PIN LQFP)		
U22,23,24	ICAMP-OP-02CH-DUALV NJM4580E-T1	010-274580-002	3
	(TSB#G5147100L105)		
U17	ICRAMS-01X016M K4S161622D-TC/L60/L80	010-310416-002	1
	HY57V161610DTC-8/M12L16161A-7T		
U3	ICREGULA-P-3.3V001A BA033FP(SOP) (ROHM)	010-400033-000	1
U29	ICREGULA-P-005V001A BA17805FP(TO252-3)(ROHM)	010-401780-000	1
U2	ICMOTORDRIVER-04CH BA5983FM (ROHM)	010-405983-000	1
U12	ICRAMF-01X001K S-24C01BFJ-TB-01/	010-512401-001	1
	24LC01BT-I/SN/M24C01-WMN6T/BR24C01AF-WE2		
U27	ICREGULA-P-&&&V&&&A LD1117S/LM117MPX-ADJ	010-721117-000	1
	RT9164CG(SOT-223)(ST/NATIONAL/RICHTEK)		
U28	ICREGULA-P-3.3V&&&A LD1117S33C/LM1117MPX	010-721117-001	1
	-3.3/RT9164-33CG (ST/NATIONAL/RICHTEK)		
U26	ICLOGIC TC74HCU04AF-EL HEX INVERTER	010-847404-001	1
	(TSB#G51451014108)		
U11	ICDIALER-NON-00 ZR36705TQC (ZORAN) ATAPI	010-893670-002	1
	INTERFACE		
U16	ICMPEG ZR36732PQC	010-893673-000	1
U13	ICRAMF-01X008M 8M BIT(512Kx16) FLASH RAM	010-993908-000	1
	SST39VF800A-70-4C-EK/SST39VF800-70-4C-EK		
U6	(F010-474116-000) IC-DRAM	045-D00035-100	1
	M11B416256A-35J (SOJ) (SW034)		
DIODES			
ZD1	ZENER DIODE 6.8V #MTZJ6.8B	011-010068-001	1
D10	RECTIFIER IN-4002,100V	011-024002-990	1
D1,2,3,4,5,6,7	CHIP DIODE (SMT) RLS4148(ROHM)	011-044148-000	7
INDUCTORS			
L2,4,5,13	INDUCTOR 10 uH CEC-100K +-10%	018-010016-000	4
L26,27,28,29	C.COIL 1.8 uH +-10% TAPE&REEL LK1608 1R8K-T	018-040187-002	4
	(TAIYO YUDEN)/MGFI1608C1R8(MICROGATE)		
L6	C.COIL 2.7 uH +-10% TAPE&REEL LK2125 2R7K-T	018-040277-001	1
	(TAIYO YUDEN)/MGFI2012C2R7(MICROGATE)		
FB1,2,3,4,5,6,7,8,9,10,11,	FERRITE BEAD #BLM11A102S (MURATA)	032-111102-000	17
12,13,14,15,16,21			
CRYSTALS & RESONATOR			
Y3	CRYSTAL 12.5 MHz +-30ppm HC-49/U	009-612500-000	1
Y4	CRYSTAL 27 MHz HC-49/U	009-627000-003	1
[illegible]	RESONATOR 33.8688 MHz 30ppm-50ppm	020-338688-000	1
	ZTA33.86MX (CHEQUERS)		

ELECTRICAL PARTS LIST - CONTINUED

Ref. No.	Description	Mfr's Part No.	Qty.
WIRES			
	FFC CABLE L=240mm P=1mm SEPH02-01960(3)	040-240240-100	1
	24P-4+232+4-P1-CF/90 UL2896 0.035x0.7		
U2 GND TO U29 GND	JP WIRE AWG26#1007 3x3mm 70mm BLACK	051-673070-009	1
U2 GND	JP WIRE AWG26#1007 3x3mm 80mm BLACK	051-673080-009	1
J3	HSG(2mm)JST PHR-05 TO PHR-05 w/258mm BR,	136-C00525-800	1
	RED,ORN,YEL,GN AWG28#UL1095		
J2	HSG(2mm)JST PHR-06 TO PHR-06 w/188mm BR,	136-C00618-800	1
	RED,ORN,YEL,GN,BL AWG28#UL1095		
MISCELLANEOUS			
J5	HEADER MOLEX 6 PINS 5267-06A PITCH 2.5mm	135-005267-060	1
	STRAIGHT TYPE		
J10	FFC CONN 6232 22 PINS w/o LOCK PITCH:1mm	135-006232-220	1
	00 6232 022 006 800 VERTICAL TYPE		
J1	FFC CONNECTOR 24 PINS PITCH:1mm LG BRAND	135-0GF106-240	1
	GF106-24S-LS HORIZONTAL UPPER CONTACT		
J6	HEADER 4 PINS PEC #2507-WS-4 PITCH 2.5mm	135-2507WS-040	1
	VERTICAL REPLACE:135-005267-040		
J9	HEADER 9 PINS PEC #2507-WS-9 PITCH 2.5mm	135-2507WS-090	1
	VERTICAL REPLACE:135-005267-090		
J3	HEADER CTL 5 PINS PHS-05 PITCH 2mm	135-PHS050-050	1
	STRAIGHT TYPE WHT COLOR (MARKING:HR)		
J2	HEADER CTL 6 PINS PHS-06 PITCH 2mm	135-PHS060-060	1
	STRAIGHT TYPE WHT COLOR (MARKING:HR)		
U2 GND	SOLDERING LUG	137-300000-000	1
MOTOR DRIVER PORTION			
RESISTORS			
C174	RESISTOR 100 Kohm +-5% 1/16W (1/8W)	001-010451-016	1
C173	RESISTOR 47 Kohm +-5% 1/16W (1/8W)	001-047351-016	1
CAPACITOR			
C172	(F003-010380-025) CERAMIC CAP 0.01 uF/ 50V	003-010380-050	1
	+80%-20%		
INTEGRATED CIRCUIT			
U127	ICMOTORDRIVER-02CH LS1641 (SIP-10-2.54)	010-731641-000	1
	(LIGHTNING)		
MISCELLANEOUS			
CN1,2	PIN HEADER 4 PINS S40L11-25 PITCH:2.54mm	135-0SB40L-040	2
	VERTICAL		
DVD MECHANISM STSD-010SMT			
	DVD-FLC-01-SAMG-N DVD MECHANISM FOR CD-R	163-000216-000	1
	CMS-S21MG6 (SAMSUNG)		
	LEAF SWITCH LS-121-0A (LUP FUNG)	022-001210-001	1
	CONN PIN 3 PINS (3.5+58+3.5) PITCH 2mm	050-030065-200	1
	UL AWG26#2651		
CN1	(F135-2001WR-051) HEADER 5 PINS	135-2001WR-050	1
	#A2001WR2-05/2001-WR-5 P:2mm HORIZONTAL		
	MOTOR-DC-006V-NORMAL 6V #RF-500TB-12560	151-061256-000	1
	(MABUCHI) 10gm (KSM-2101-ABM-AL)		
RDS PORTION			
RESISTORS			
R458	CHIP RESISTOR 1 Kohm +-5% 1/16W (0603/1608)	001-310252-016	1

ELECTRICAL PARTS LIST - CONTINUED

Ref. No.	Description	Mfr's Part No.	Qty.
R471	CHIP RESISTOR 18 Kohm +-5% 1/16W (0603/1608)	001-318352-016	1
R454,456	CHIP RESISTOR 2.2 Kohm +-5% 1/16W (0603/1608)	001-322252-016	2
R457	CHIP RESISTOR 330 Kohm +-5% 1/16W (0603/1608)	001-333452-016	1
R455	CHIP RESISTOR 470 Kohm +-5% 1/16W (0603/1608)	001-347452-016	1
R453	CHIP RESISTOR 560 ohm +-5% 1/16W (0603/1608)	001-356152-016	1
CAPACITORS			
C459	CHIP CAP 0.1 uF/16V +-10% (0603/1608)	003-510412-016	1
	(87-A10-260-08G) (C1608JB1C104K) (TDK)		
C454	CHIP CAP 0.0022 uF/50V +-10% (0603/1608)	003-522212-050	1
	(UMK107B222KZ-TM)		
C452,453	CHIP CAP 0.022 uF/25V +-10% (0603/1608)	003-522312-025	2
	(MCH182C223KK/GRM39X7R223K25PT)		
C456	CHIP CAP 0.047 uF/25V +-10% (0603/1608)	003-547312-025	1
C460	CHIP CAP 560 pF/50V +-10% (0603/1608)	003-556112-050	1
C457,458	CHIP CAP 33 pF/50V +-5% NPO (0603/1608)	003-633052-050	2
	(GRM39COG330J50PT/MCH185A330JK)		
C461	ELECT CAP 2.2 MFD/50V +-20% (5x11)	006-002000-50D	1
C451	ELECT CAP 100 MFD/10V +-20% (5x11)	006-010100-10D	1
TRANSISTORS			
Q412,413	TR NPNSST-RAD&SC-059 2SC2712GR	008-A02712-000	2
	(89-327-125-08)		
CRYSTAL			
CX402	CRYSTAL 4.332 MHz CSA309 CL=16pF CITIZEN	009-604332-000	1
	(87-A70-091-01G)		
INTEGRATED CIRCUIT			
IC403	ICRDS DECODER BU1923F (ROHM)	010-351923-001	1
DIODE			
DZ402	ZENER IN-5231B,HZ5C1,5.1V,1/2W	011-010051-120	1
INDUCTOR			
L402	INDUCTOR 100 uH /1128/CEC-101K +-10%	018-010014-000	1
	LAL03 TB 101K		
SCART PORTION			
RESISTORS			
R715	RESISTOR 100 ohm +-5% 1/16W (1/8W)	001-010151-016	1
R717,718,720	RESISTOR 10 Kohm +-5% 1/16W (1/8W)	001-010351-016	3
R702,703	RESISTOR 12 Kohm +-5% 1/16W (1/8W)	001-012351-016	2
R721	RESISTOR 2 Kohm +-5% 1/16W (1/8W)	001-020251-016	1
R701,706,722	RESISTOR 2.7 Kohm +-5% 1/16W (1/8W)	001-027251-016	3
R708,709	RESISTOR 33 Kohm +-5% 1/16W (1/8W)	001-033351-016	2
R710,711,712,707,719	RESISTOR 4.7 Kohm +-5% 1/16W (1/8W)	001-047251-016	5
CAPACITORS			
C701,702	ELECT CAP 0.22 MFD/50V +-20% (VX/5x11)	006-000200-50C	2
C703,704	ELECT CAP 10 MFD/50V +-20% (5x11)	006-010000-50D	2
C711,712	ELECT CAP 100 MFD/16V +-20% (5x11)	006-010100-16D	2
INDUCTORS			
FB701,702,703,704,705,	FERRITE BEAD INDUCTOR #BL01RN1-A62	032-101162-000	7
706,707	0.45 uH/7A (5x3.6mm) (87-008-372-01)		
WIRE			
	FFC CABLE 22 PINS L=128mm 4+120+4 P:1mm	040-220128-100	1
	UL2896 0.035x0.7 (TUNG HING)		
TRANSISTORS			

ELECTRICAL PARTS LIST - CONTINUED

Ref. No.	Description	Mfr's Part No.	Qty.
Q701,702,708,709	TR NPNGEN-BUL&TO-092 3DG9014(9014)	008-609014-000	4
MISCELLANEOUS			
WH702 J11	FFC CONN 6232 22 PINS w/o LOCK PITCH:1mm	135-006232-220	2
	00 6232 022 006 800 VERTICAL TYPE		
JK701	RGB CONNECTOR SOCKET 21 PINS	135-HRC021-210	1
	HRC-021V-07(KUNMING)/MRC-021V-04(HONDA)		
TUNER PORTION			
RESISTORS			
JP403,404,405,407,408,	CHIP RESISTOR 0 ohm +-5% 1/16W (0603/1608)	001-300052-016	9
409,421,423,425			
R467	CHIP RESISTOR 10 ohm +-5% 1/16W (0603/1608)	001-310052-016	1
R415,430,431	CHIP RESISTOR 100 ohm +-5% 1/16W (0603/1608)	001-310152-016	3
R401,410,412,443,444,	CHIP RESISTOR 1 Kohm +-5% 1/16W (0603/1608)	001-310252-016	8
445,459,465			
R451,461,409	CHIP RESISTOR 10 Kohm +-5% 1/16W (0603/1608)	001-310352-016	3
R402,403,435,448	CHIP RESISTOR 100 Kohm +-5% 1/16W (0603/1608)	001-310452-016	4
R420	CHIP RESISTOR 12 Kohm +-5% 1/16W (0603/1608)	001-312352-016	1
R421,442	CHIP RESISTOR 18 Kohm +-5% 1/16W (0603/1608)	001-318352-016	2
R406,416	CHIP RESISTOR 220 ohm +-5% 1/16W (0603/1608)	001-322152-016	2
R405,422,438	CHIP RESISTOR 2.2 Kohm +-5% 1/16W (0603/1608)	001-322252-016	3
R413,417,423	CHIP RESISTOR 22 Kohm +-5% 1/16W (0603/1608)	001-322352-016	3
R411,419,424,425,426,	CHIP RESISTOR 3.3 Kohm +-5% 1/16W (0603/1608)	001-333252-016	7
427,452			
R404,407	CHIP RESISTOR 47 ohm +-5% 1/16W (0603/1608)	001-347052-016	2
R408	CHIP RESISTOR 470 ohm +-5% 1/16W (0603/1608)	001-347152-016	1
R418,428,429,436,447	CHIP RESISTOR 4.7 Kohm +-5% 1/16W (0603/1608)	001-347252-016	5
R446	CHIP RESISTOR 47 Kohm +-5% 1/16W	001-347352-016	1
	(0603/1608) (MCR03EZHJ-473)		
R414	CHIP RESISTOR 56 ohm +-5% 1/16W (0603/1608)	001-356052-016	1
R437	CHIP RESISTOR 560 ohm +-5% 1/16W (0603/1608)	001-356152-016	1
R460	CHIP RESISTOR 5.6 Kohm +-5% 1/16W (0603/1608)	001-356252-016	1
R466	CHIP RESISTOR 8.2 Kohm +-5% 1/16W (0603/1608)	001-382252-016	1
CAPACITORS			
C421	CHIP CAP 0.001 uF/50V +-10% (0603/1608)	003-510212-050	1
	(MCH185C102KK/GRM39X7R102K50PT)		
C403,404,409,410,415	CHIP CAP 0.01 uF/50V +-10% (0603/1608)	003-510312-050	5
	(GRM39B103K50PT) (TSB#G5103101T109)		
C418,427,436	CHIP CAP 0.1 uF/16V +-10% (0603/1608)	003-510412-016	3
	(87-A10-260-08G) (C1608JB1C104K) (TDK)		
C422,428,429,432,433	CHIP CAP 0.015 pF/50V +-10% (0603/1608)	003-515312-050	5
C402,438	CHIP CAP 0.0022 uF/50V +-10% (0603/1608)	003-522212-050	2
	(UMK107B222KZ-TM)		
C405,411,414,439,441,	CHIP CAP 0.022 uF/50V +-10% (0603/1608)	003-522312-050	7
444,466			
C473,476	CHIP CAP 0.0047 uF/50V +-10% (0603/1608)	003-547212-050	2
C423	CHIP CAP 0.47 uF/10V +-10% (0603/1608)	003-547412-010	1
	(LMK107BL474KA-T)		
C424	(F003-556382-016) CHIP CAP 0.056 uF/16V	003-556312-016	1
	+-10% (0603/1608)		
C413	CHIP CAP 10 pF/50V +-5% NPO (0603/1608)	003-610052-050	1
	(UMK107CH100DZ-TM)		

ELECTRICAL PARTS LIST - CONTINUED

Ref. No.	Description	Mfr's Part No.	Qty.
C406	CHIP CAP 0.047 uF/25V +-10% (0603/1608)	003-547312-025	1
C420,448,449	(F003-610112-050) CHIP CAP 100 pF/50V	003-610152-050	3
	+-5% NPO (0603/1608)		
C446,447	CHIP CAP 24 pF/50V +-5% NPO (0603/1608)	003-624052-050	2
C412	POLY CAP 350 pF/50V +-5% (B351J09P2HH333AAA)	005-035100-000	1
C425,467,468	ELECT CAP 0.47 MFD/50V +-20% (5x11)	006-000400-50D	3
C417,426,430,431	ELECT CAP 1 MFD/50V +-20% (5x11)	006-001000-50D	4
C435	ELECT CAP 10 MFD/50V +-20% (5x11)	006-010000-50D	1
C437,465,470	ELECT CAP 100 MFD/16V +-20% (5x11)	006-010100-16D	3
C419	ELECT CAP 22 MFD/25V +-20% (5x11)	006-022000-25D	1
C442	ELECT CAP 220 MFD/10V +-20% (6.3x11)	006-022100-10D	1
C416,471	ELECT CAP 220 MFD/16V +-20% (8x11.5)	006-022100-16D	1
C408	ELECT CAP 47 MFD/16V +-20% (5x11)	006-047000-16D	1
TC401	TRIMMER CAP CVN610 3-10pF WHITE	007-200610-000	1
	(6x6x5mm) (JIN MYOUNG)		
TRANSISTORS			
Q402	CHIP NJFET SST201/SST201B-T1 (SILICONIX)	008-A00201-010	1
	2SK208Y TOSHIBA		
Q409,410	TR PNPPWR-RAD&SC-059 2SA1036K	008-A01036-000	2
Q403,404,405,411	TR NPNSST-RAD&SC-059 2SC2712GR	008-A02712-000	4
	(89-327-125-08)		
INTEGRATED CIRCUITS			
IC401	ICRDS TA2099N (TOSHIBA) (87-A21-173-01)	010-832099-000	1
IC402	ICPLL TC9257F	010-849257-000	1
DIODES			
VD401,402	VARI CAP DIODE 1SV149B,TOSHIBA	011-000149-000	2
D401,402,403,404	DIODE IN-4148 ROHM/TELEFUNKEN TAP**50	011-004148-000	4
	KEL(NS)(TAP:52mm)/NS(FAIRCHILD)/SEMTECH		
INDUCTORS			
T408,409	IFT 7PF022C 7.8mm BLACK	012-000022-078	2
T405	IFT 7M4A1720R 7.5mm YELLOW	012-001720-075	1
T403	IFT 7M1A1905R 7.5mm RED	012-001905-075	1
T401	IFT 7M1A1950R 7.5mm BLACK	012-001950-075	1
L401,403	INDUCTOR 100 uH /1128/CEC-101K +-10%	018-010014-000	2
	LAL03 TB 101K		
CRYSTAL & FILTERS			
CX401	CRYSTAL 7.2 MHz HC-49/U	009-607200-000	1
CF401,402	CERAMIC FILTER SFE10.7MS3-A	019-000107-006	2
CF404	CERAMIC FILTER CDA10.7MG82-A	019-000107-028	1
CF403	(F019-000450-002) CERAMIC FILTER LTU450G2	019-000450-012	1
MISCELLANEOUS			
	TUNER-FM&&&00STATION FM FRONT END TUNER	042-103010-000	1
	PET-3010F/H (EU) (TAE BONG)		
	JACK COAXIAL JACK HTR-401V	118-030401-000	1
JK401	HEADER MOLEX 2 PINS 5268-02A PITCH 2.5mm	135-005268-020	1
	HORIZONTAL TYPE		
	PIN HEADER 13 PINS S40R20 PITCH:2mm	135-S40R20-130	1
	SINGLE ROW RIGHT ANGLE		
CENTRE SPEAKER PORTION			
	JP WIRE AWG22#1007 5x5mm 130mm RED	051-275130-006	1
	JP WIRE AWG22#1007 5x5mm 130mm BLACK	051-275130-009	1

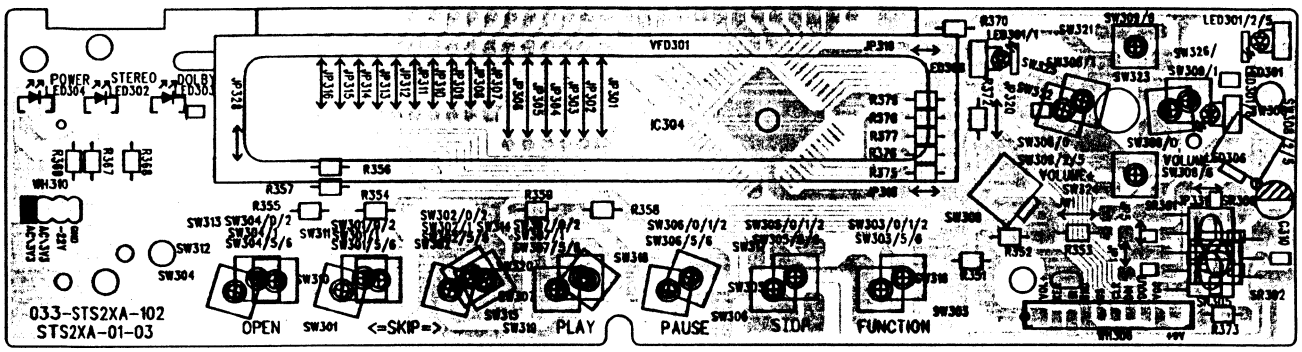
ELECTRICAL PARTS LIST - CONTINUED

Ref. No.	Description	Mfr's Part No.	Qty.
	PUSH TERMINAL BOARD PT-213-03 BLACK,RED	118-000213-000	1
	MSP-105H-03 BLACK,RED		
FOR CT	SPK WIRE UL/CSA 2468 2x22 AWG 17/0.16mm	122-002120-401	1
	TRANS. w/BK LINE 4M w/TUBE 2xRED,BLK,BRN		
	SPK00003"008OHM0030W w/BK DOME PAPER CAP	131-308030-012	1
	#LF77SZ4309G50C8AS16CDB		
SUB-WOOFER PORTION			
FOR SUB	SPK WIRE UL/CSA 2468 2x22 AWG 17/0.16mm	122-002121-005	1
	TRANS.w/BK LINE 10M w/TUBE 1xRED,BLK,WHT		
	SPK006.5"006OHM0060W w/BK DOME PAPER CAP	131-656060-011	1
	#LW165KZ5804G70F6A26PDB K0626		
4-SPEAKER PORTION			
	JP WIRE AWG22#1007 5x5mm 130mm RED	051-275130-006	4
	JP WIRE AWG22#1007 5x5mm 130mm BLACK	051-275130-009	4
	PUSH TERMINAL BOARD PT-213-03 BLACK,RED	118-000213-000	4
	MSP-105H-03 BLACK,RED		
FOR FR	SPK WIRE UL/CSA 2468 2x22 AWG 17/0.16mm	122-002120-402	1
	TRANS.w/BK LINE 4M w/TUBE 2xRED,BLK,YEL		
FOR FL	SPK WIRE UL/CSA 2468 2x22 AWG 17/0.16mm	122-002120-403	1
	TRANS.w/BK LINE 4M w/TUBE 2xRED,BLK,BLUE		
FOR SR	SPK WIRE UL/CSA 2468 2x22 AWG 17/0.16mm	122-002121-003	1
	TRANS.w/BK LINE 10M w/TUBE 2xRED,BLK,GRN		

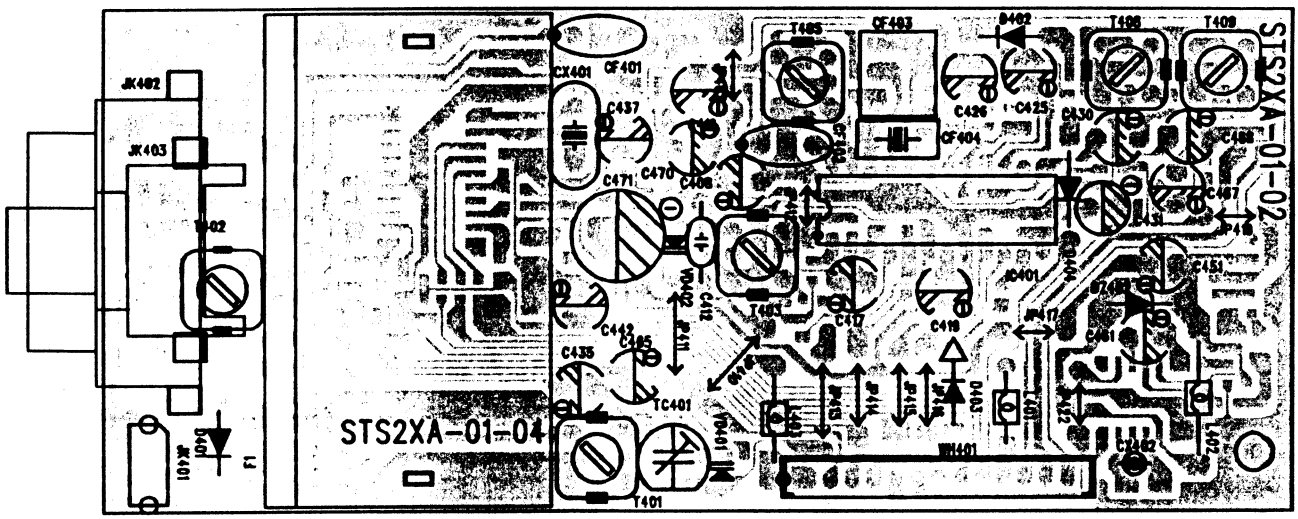
NOTE: ⚠ Symbol in parts list represent safety parts.

PRINTED CIRCUIT BOARDS

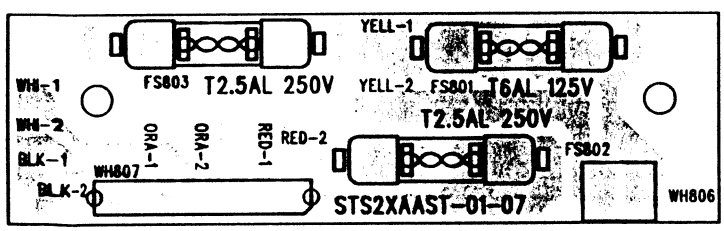
DISPLAY KEY PCB
STS21AAST-01-03



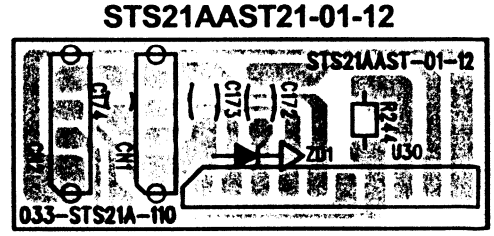
TUNER PCB
STS21AAST-01-04



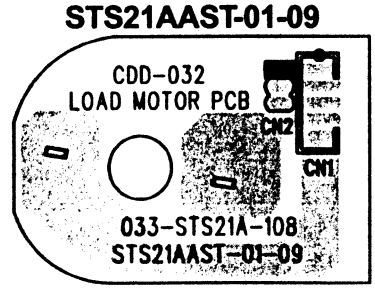
FUSE PCB
STS21AAST-01-07



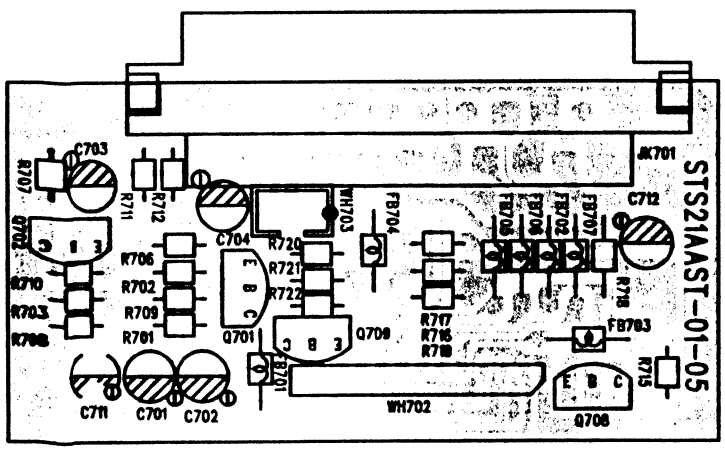
MOTOR DRIVER PCB
STS21AAST21-01-12



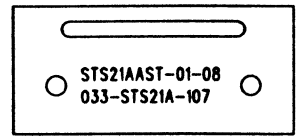
LOAD MOTOR PCB
STS21AAST-01-09



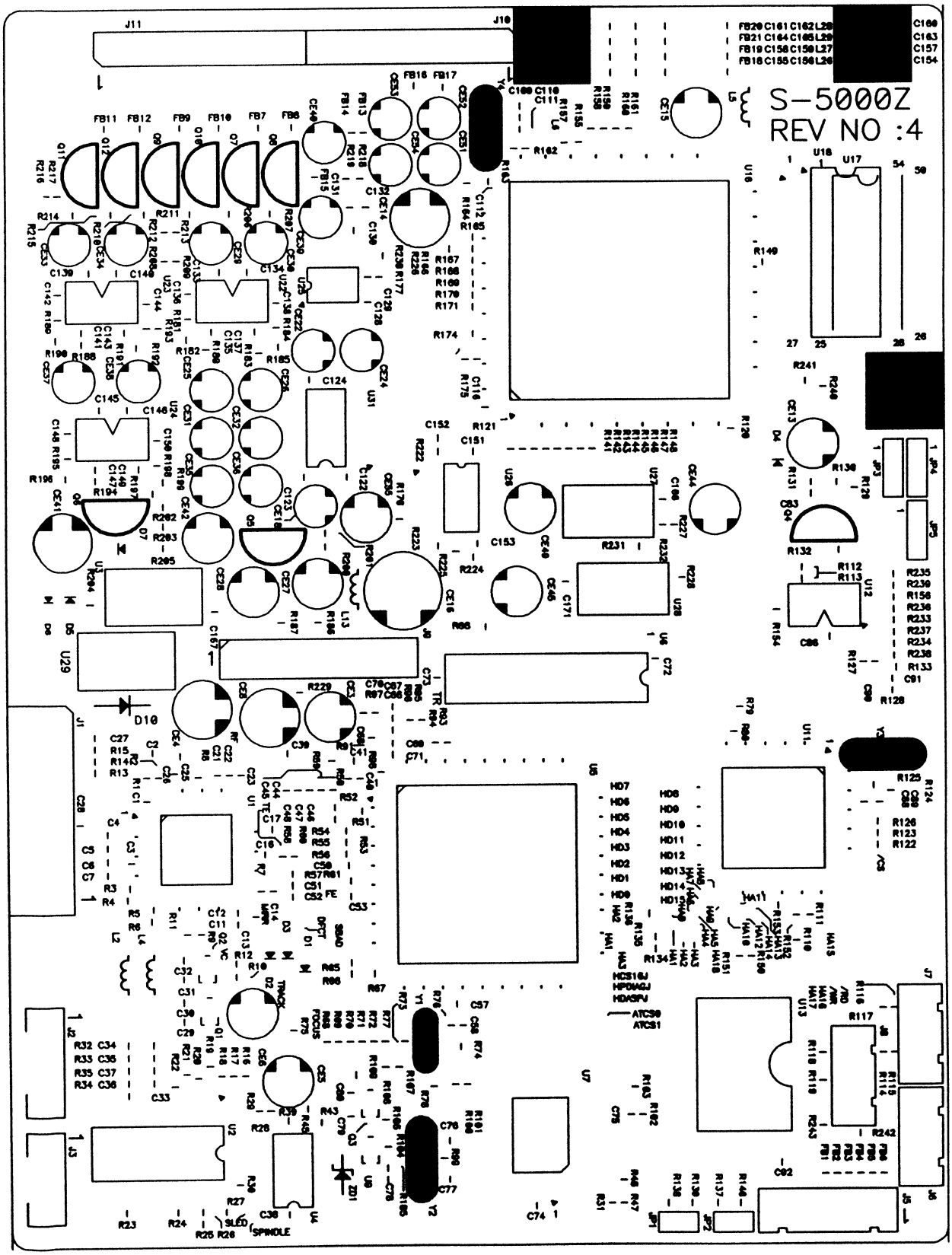
SCART PCB
STS21AAST-01-05



BLANK PCB
STS21AAST-01-08

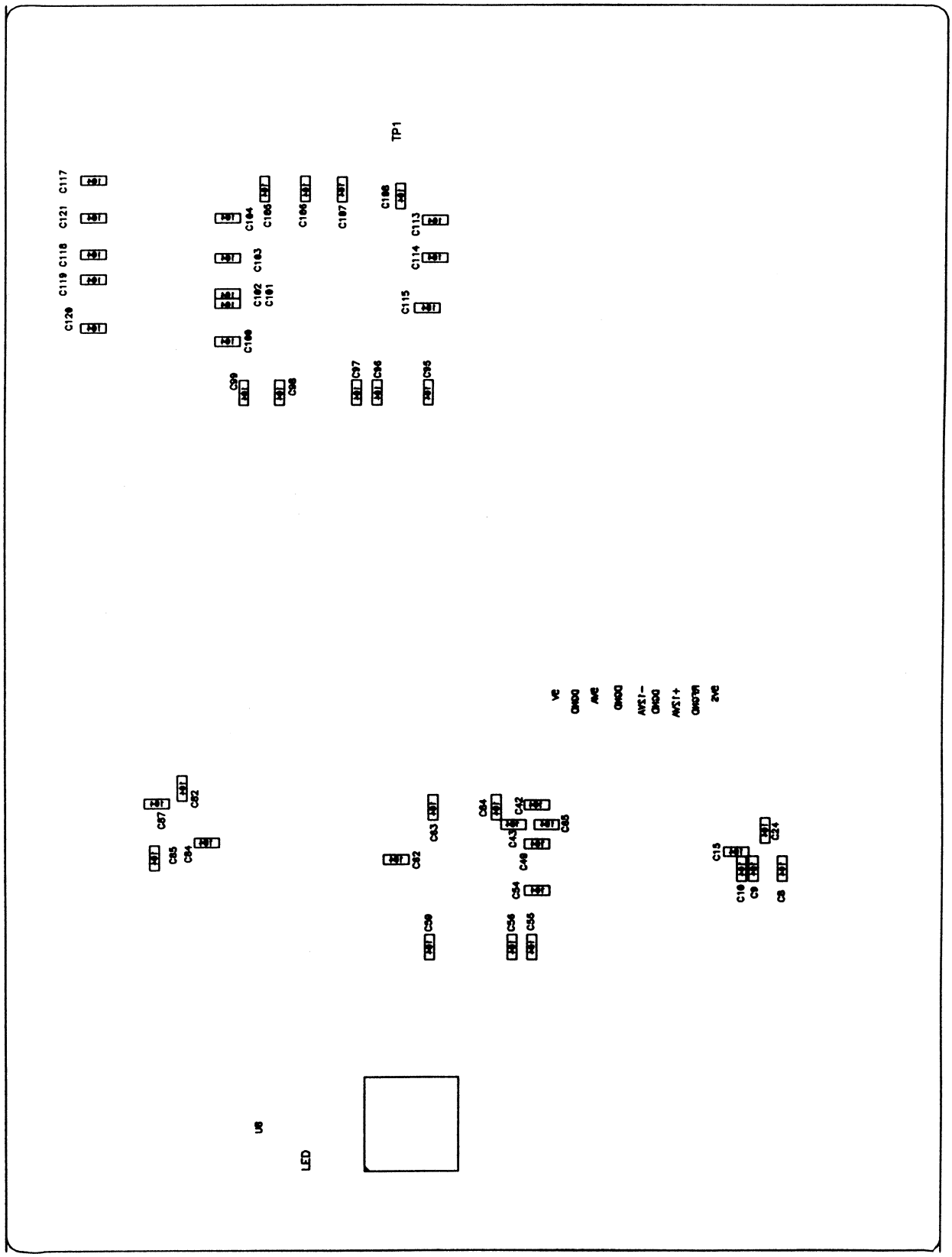


MPEG+SERVO PCB
STS21AAST-01-02



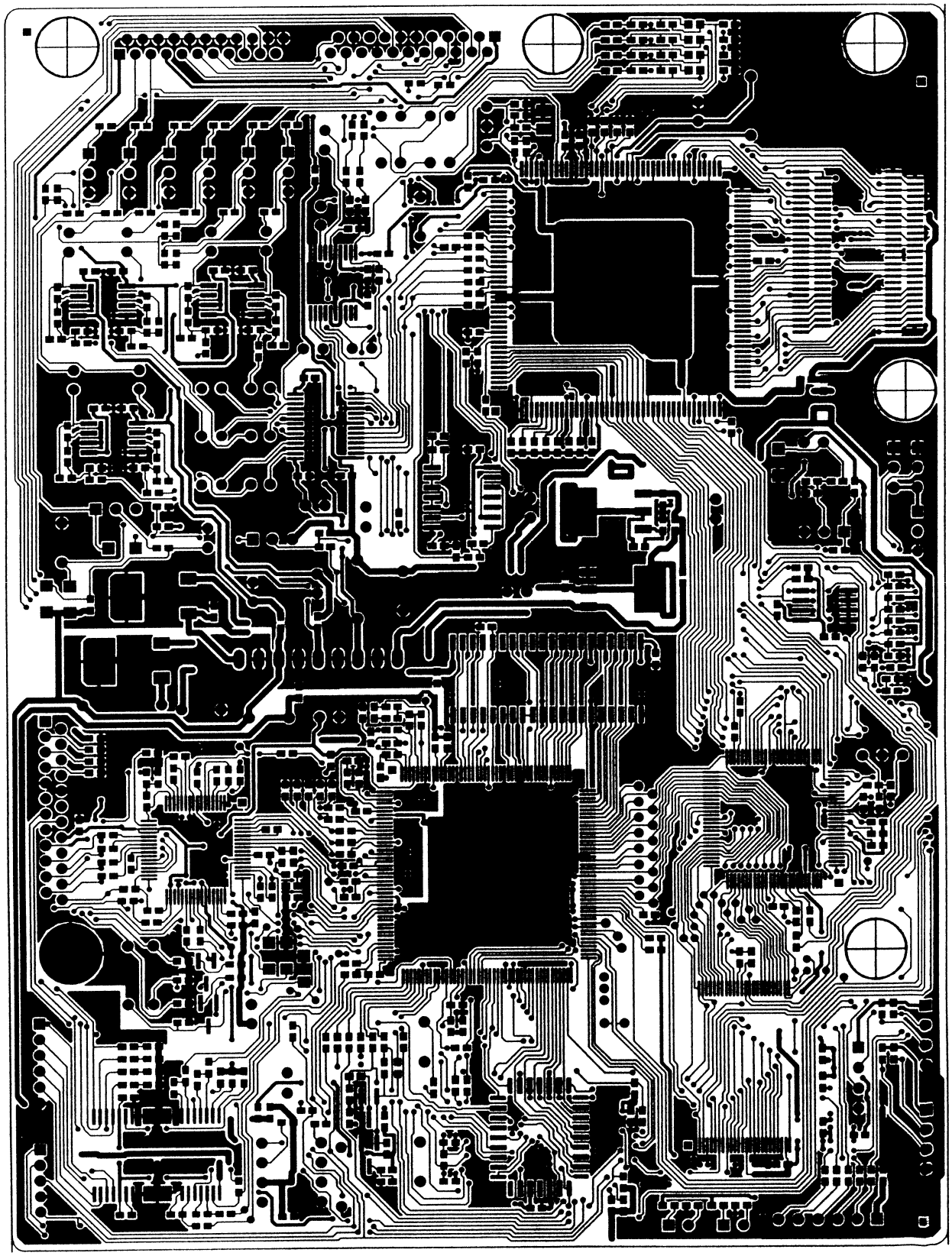
TOP VIEW

MPEG+SERVO PCB
STS21AAST-01-02



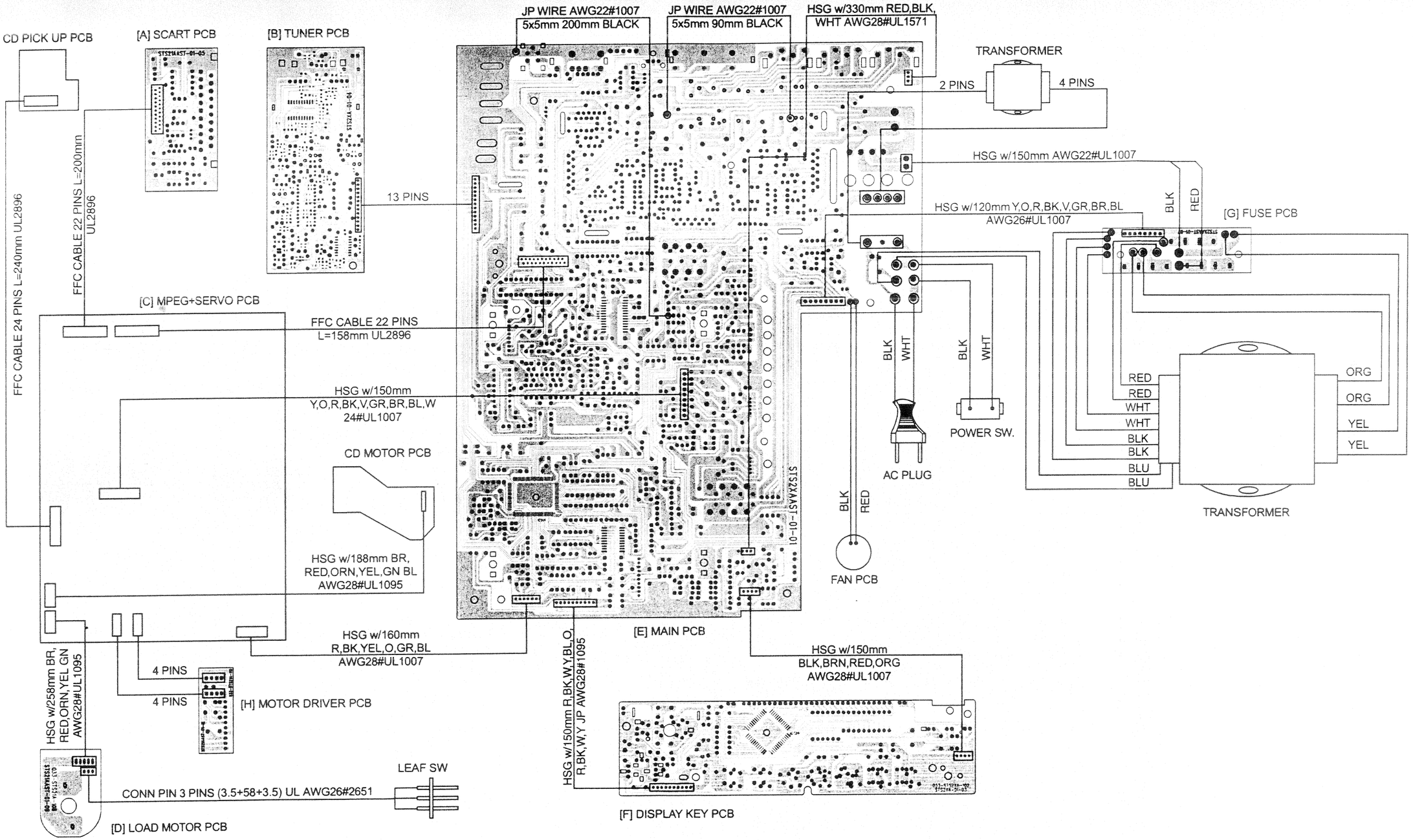
BOTTOM VIEW

MPEG+SERVO PCB
STS21AAST-01-02

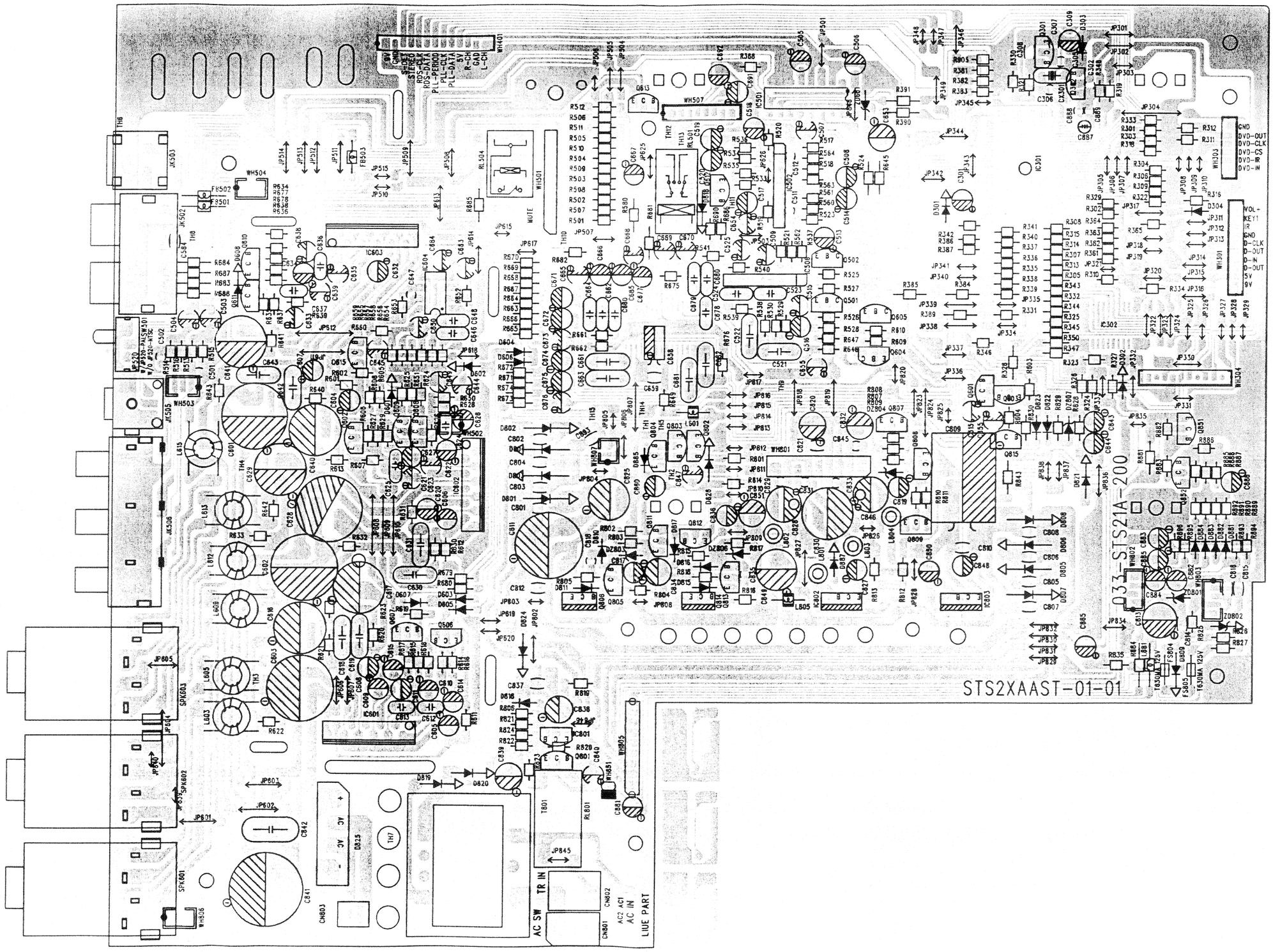


COPPER SIDED

WIRING DIAGRAM

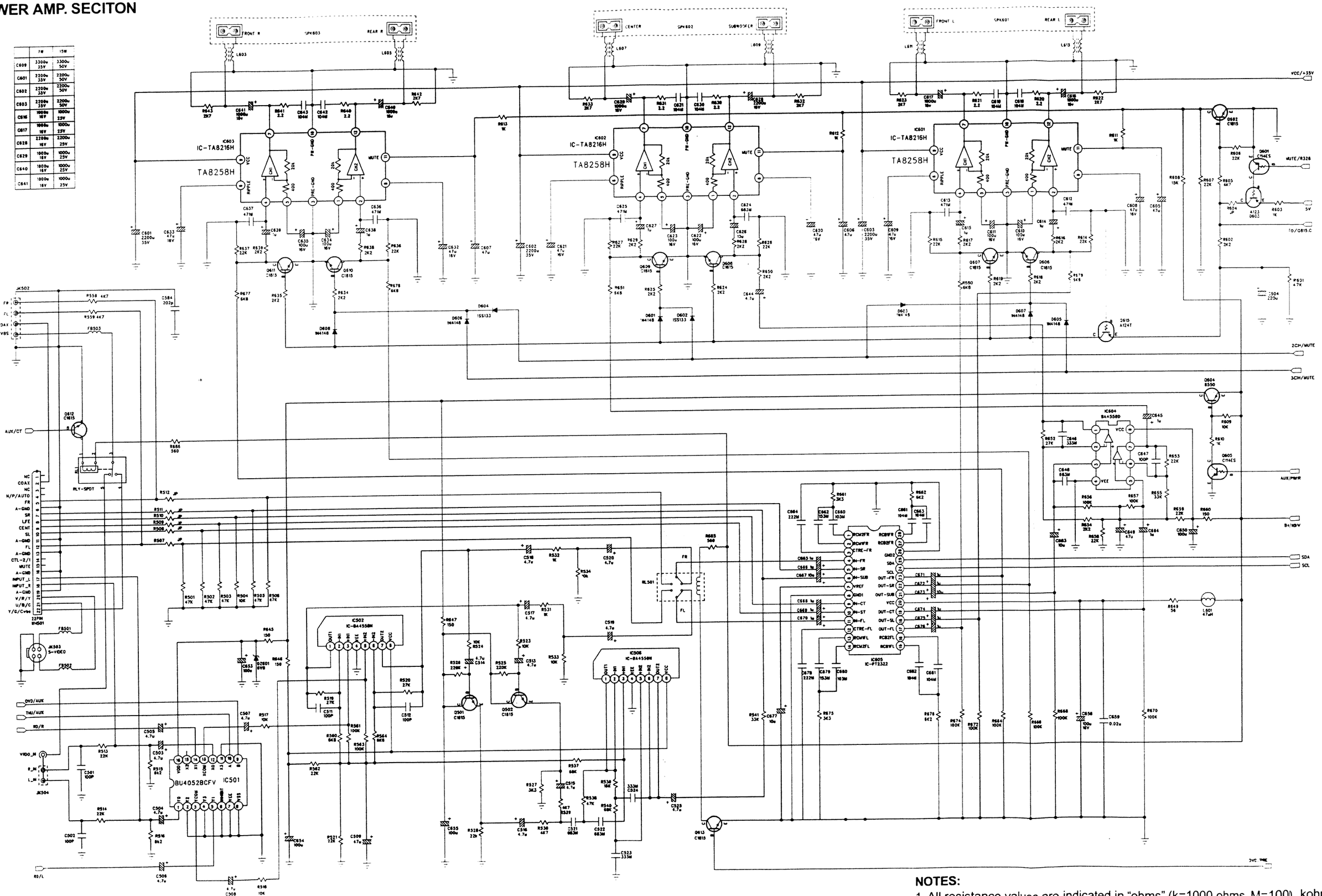


MAIN PCB
STS21AAST-01-01

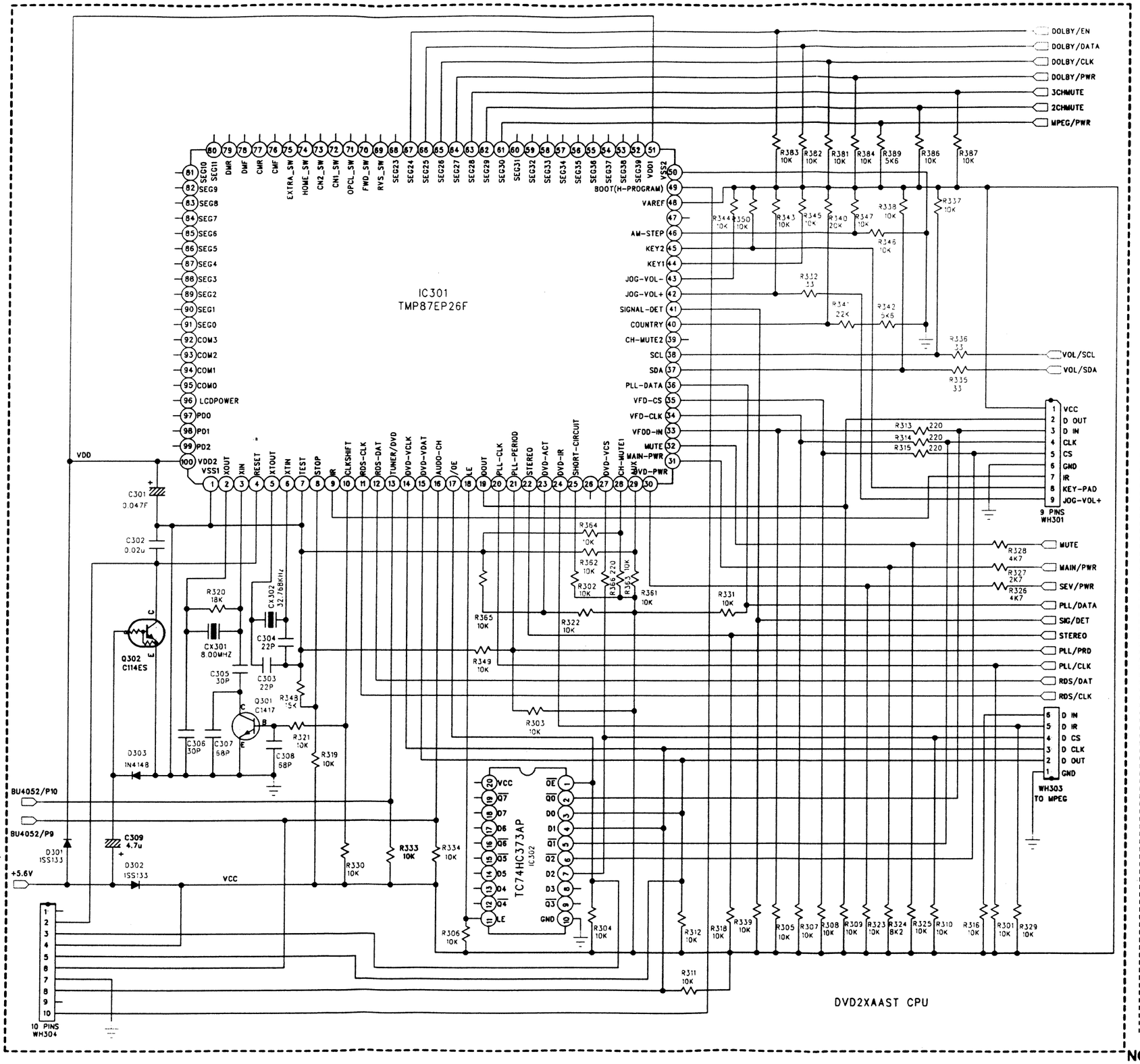


POWER AMP. SECITON

	7W	15W
C609	3300u 35V	3300u 50V
C601	2200u 35V	2200u 50V
C602	2200u 35V	2200u 50V
C603	2200u 35V	2200u 50V
C616	1000u 16V	1000u 25V
C617	1000u 16V	1000u 25V
C628	2200u 16V	2200u 25V
C629	1000u 16V	1000u 25V
C640	1000u 16V	1000u 25V
C641	1000u 16V	1000u 25V



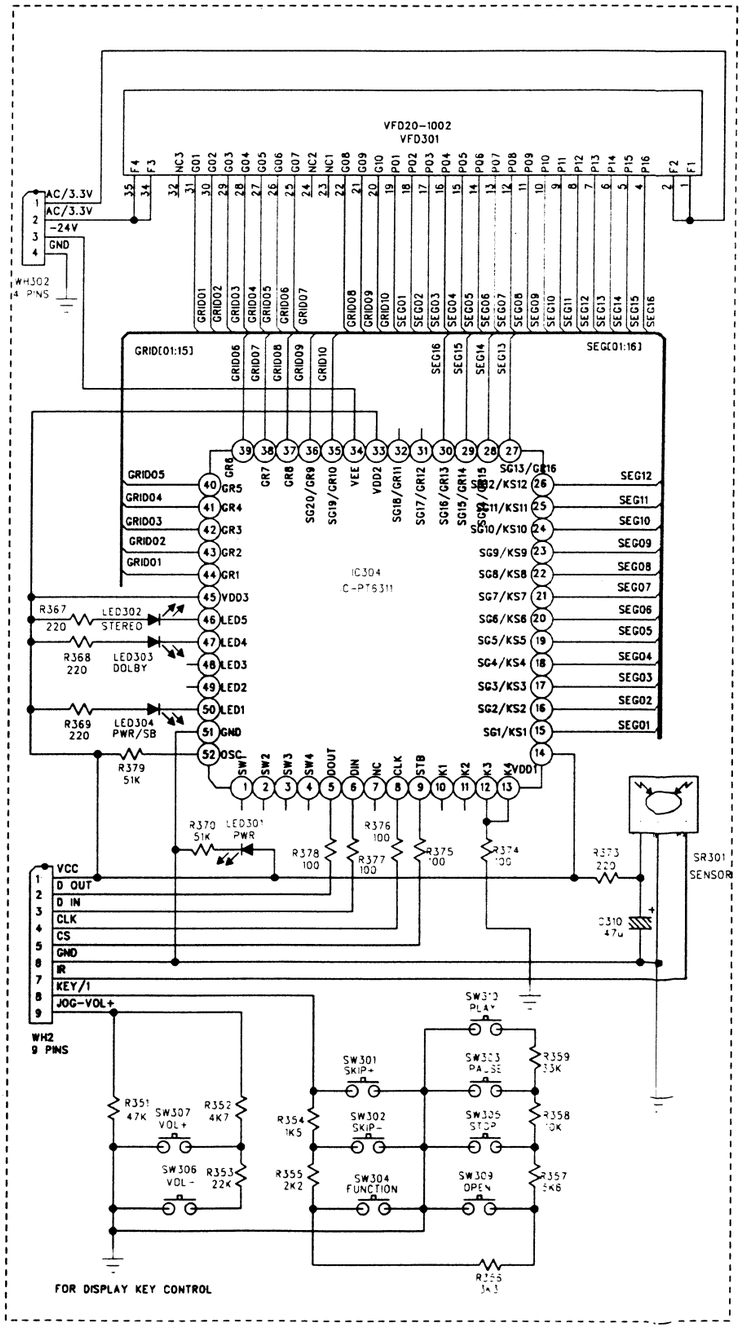
CPU & CONTROL SECTION



	AAS	AAST	AUX IN
R303	NC	10K	
R349	10K	NC	
R361			10K
R362			NC
R363	NC	10K	
R364	10K	NC	

COUNTRY	R340	R342	R341
USA1	20K	100K	10K
USA2	20K	39K	5K6
EUROPE1	20K	5K6	27K
EPROE2	20K	12K	3K9
JAPAN	20K	3K3	1K

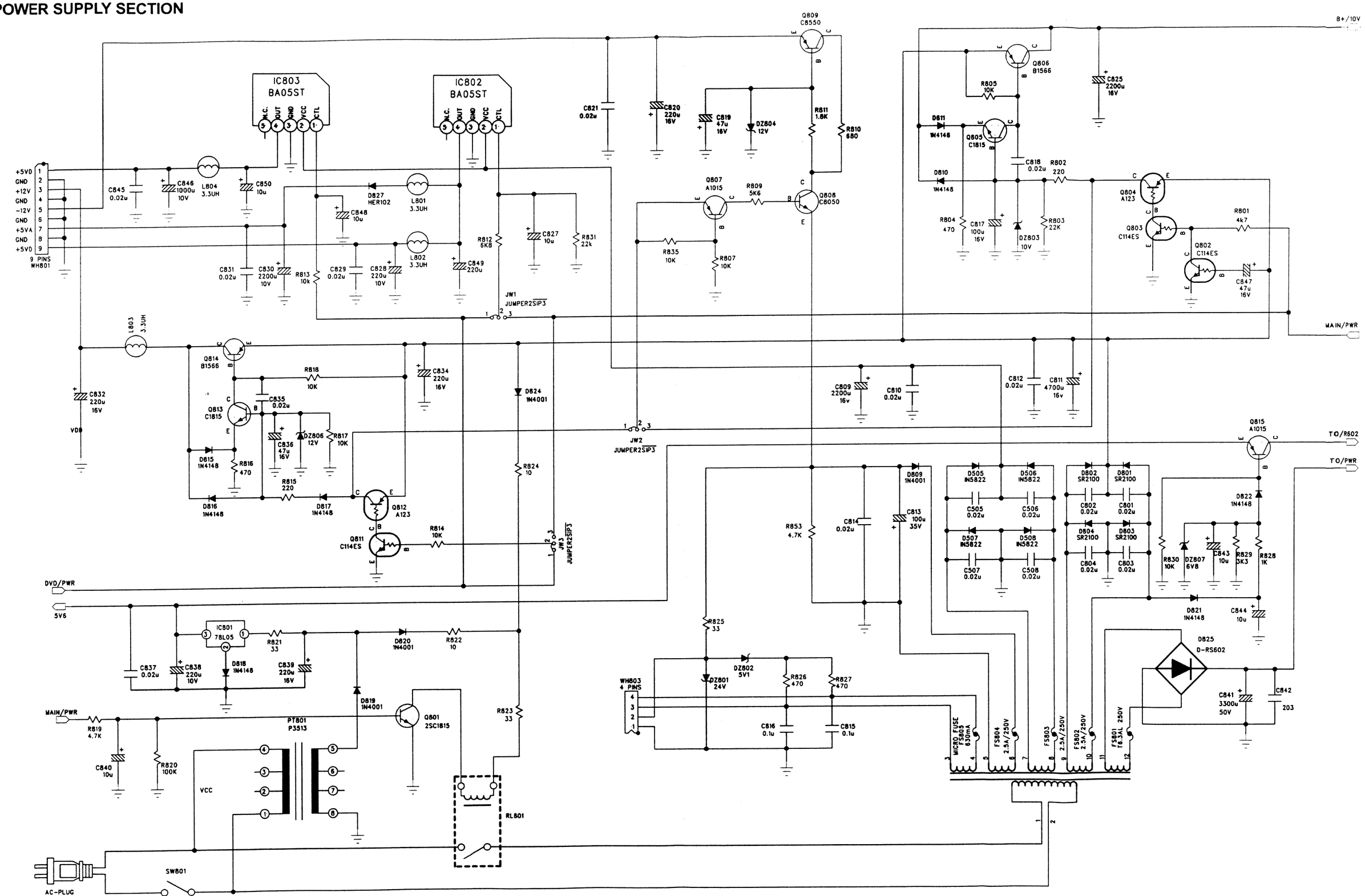
AM STEP	R347	R346
S/W CHG	47K	OPEN
ORG STEP	47K	47K
TOG STEP	OPEN	47K



NOTES:

1. All resistance values are indicated in "ohms" (k=1000 ohms. M=1000 kohms).
2. All capacitance values are indicated in "μF" ($p=10^{-6}$μF).

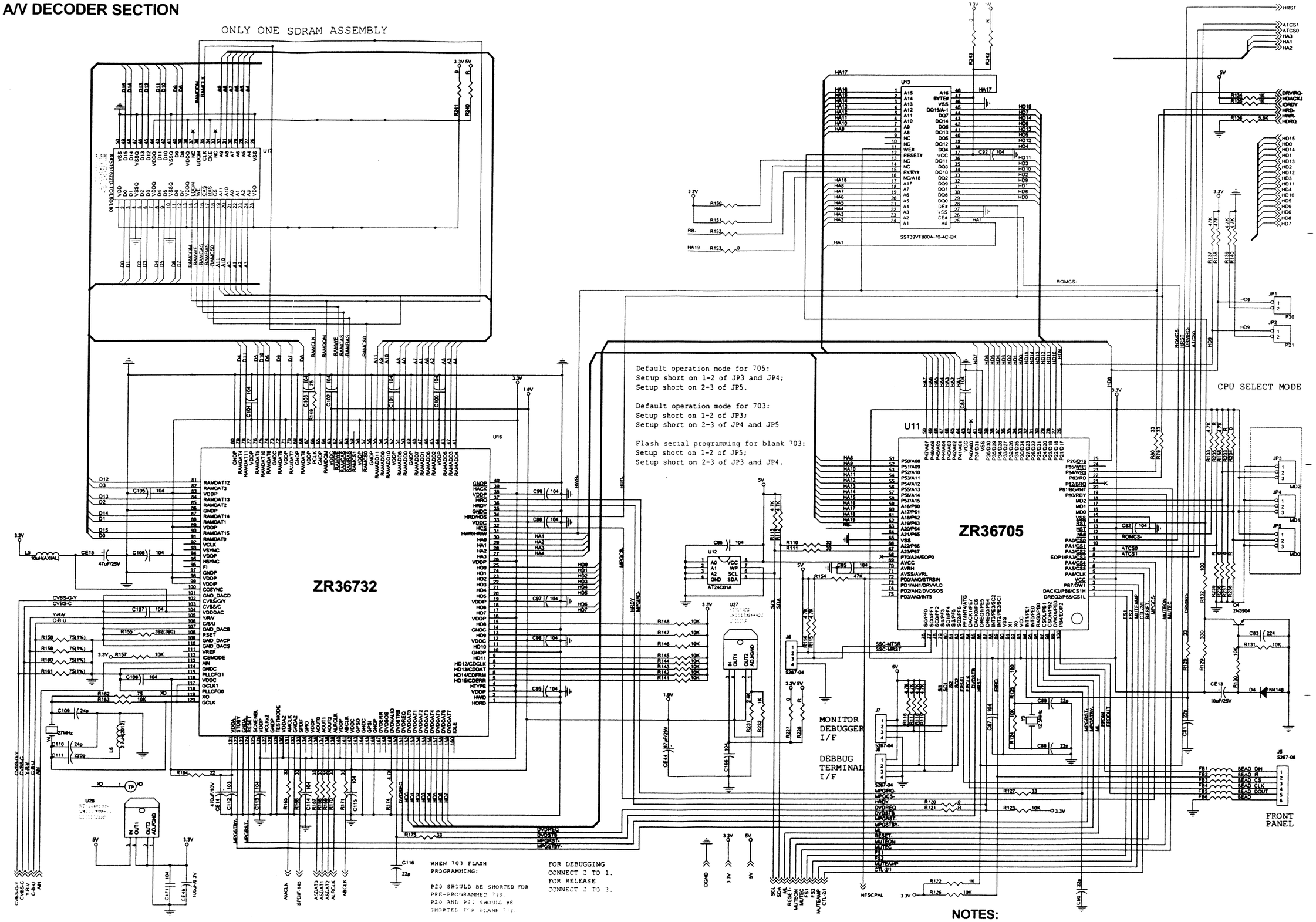
POWER SUPPLY SECTION



NOTES:

1. All resistance values are indicated in "ohms" (k=1000 ohms. M=1000 kohms).
2. All capacitance values are indicated in "µF" ($p=10^{-6}$µF).

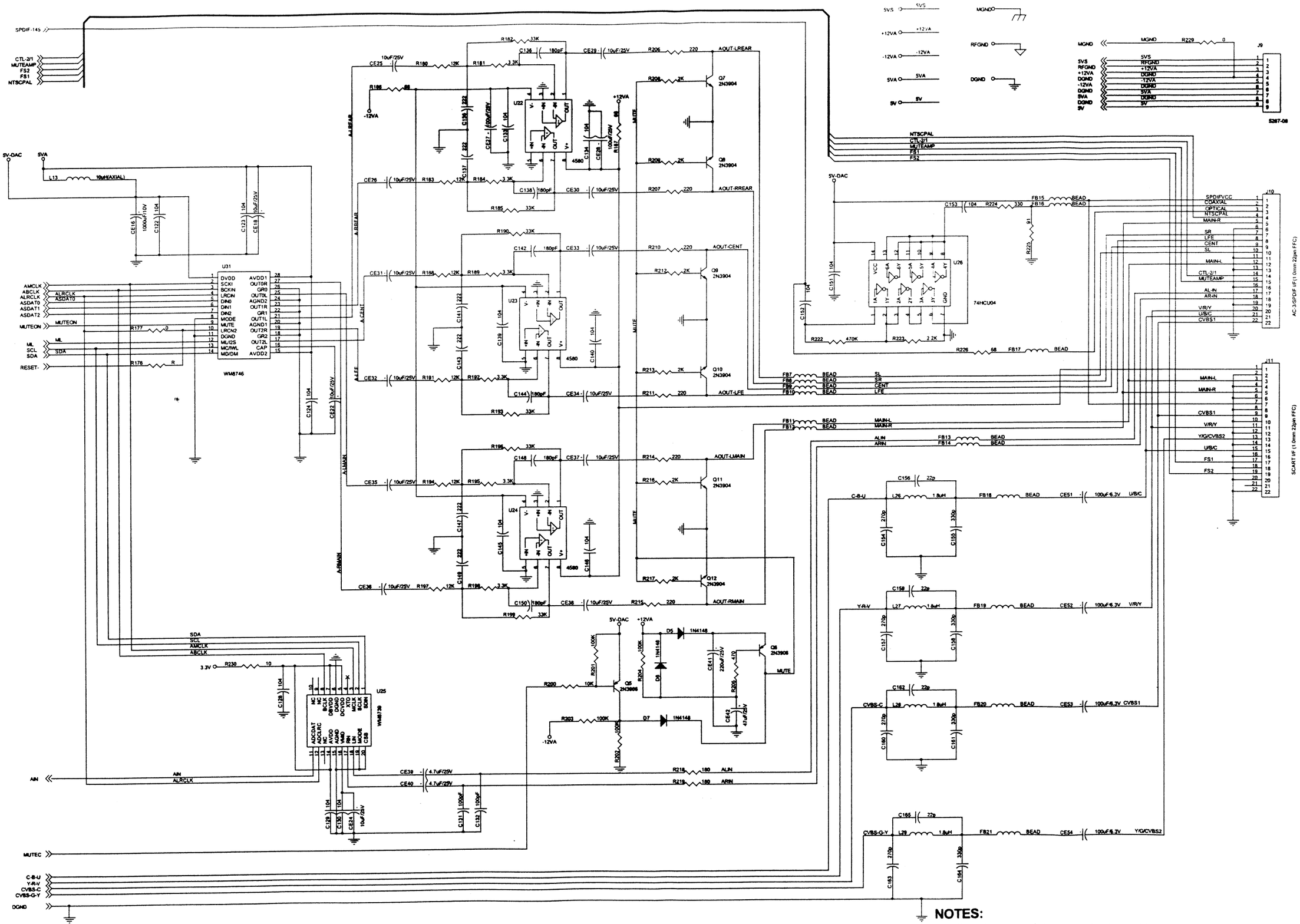
A/V DECODER SECTION



NOTES:

1. All resistance values are indicated in "ohms" (k=1000 ohms. M=1000 k ohms).
2. All capacitance values are indicated in "μF" (p=10^{-6} μF).

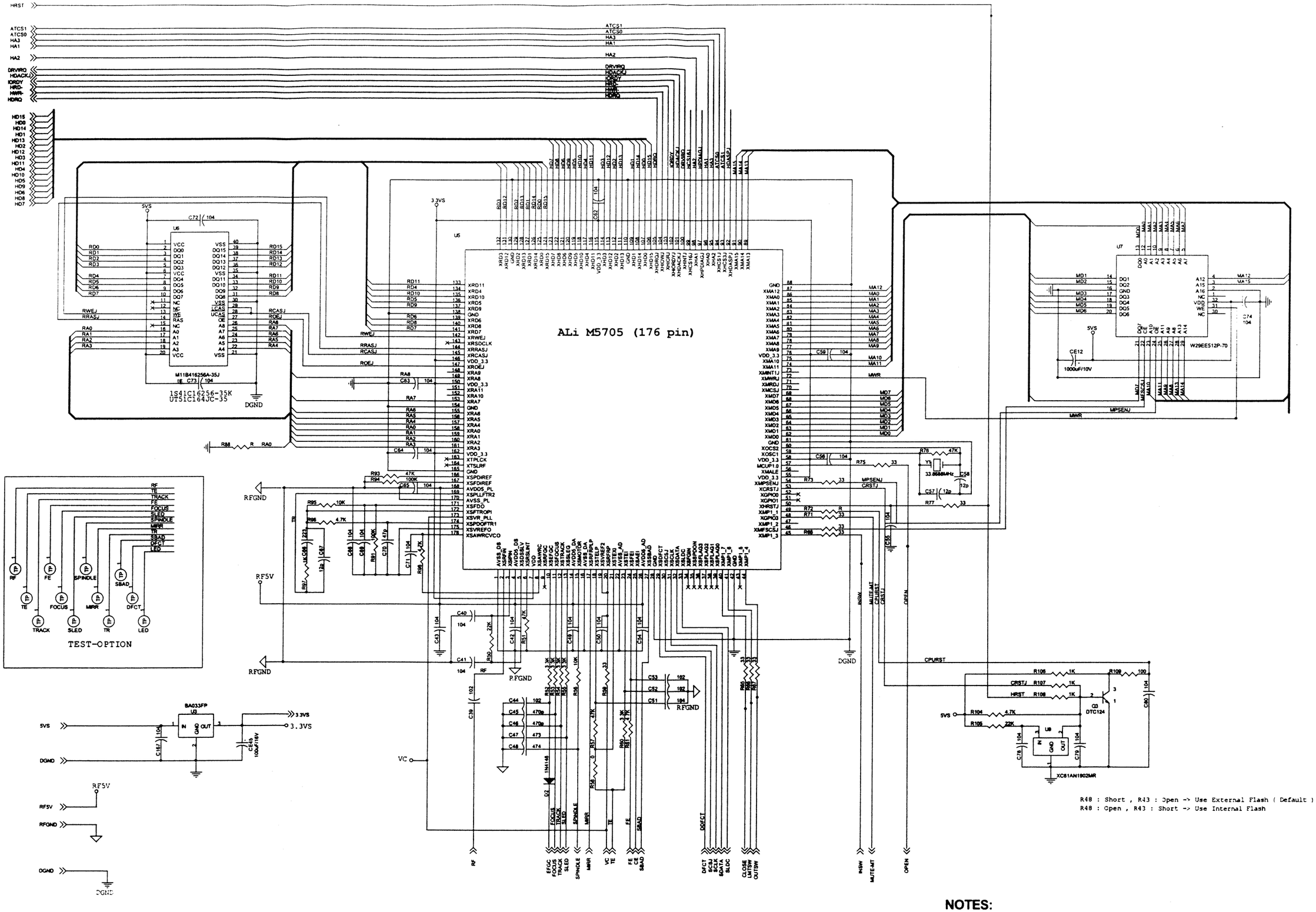
A/V OUTPUT SECTION



NOTES:

1. All resistance values are indicated in "ohms" (k=1000 ohms. M=1000 k ohms).
2. All capacitance values are indicated in "μF" ($p=10^{-6}$ μF).

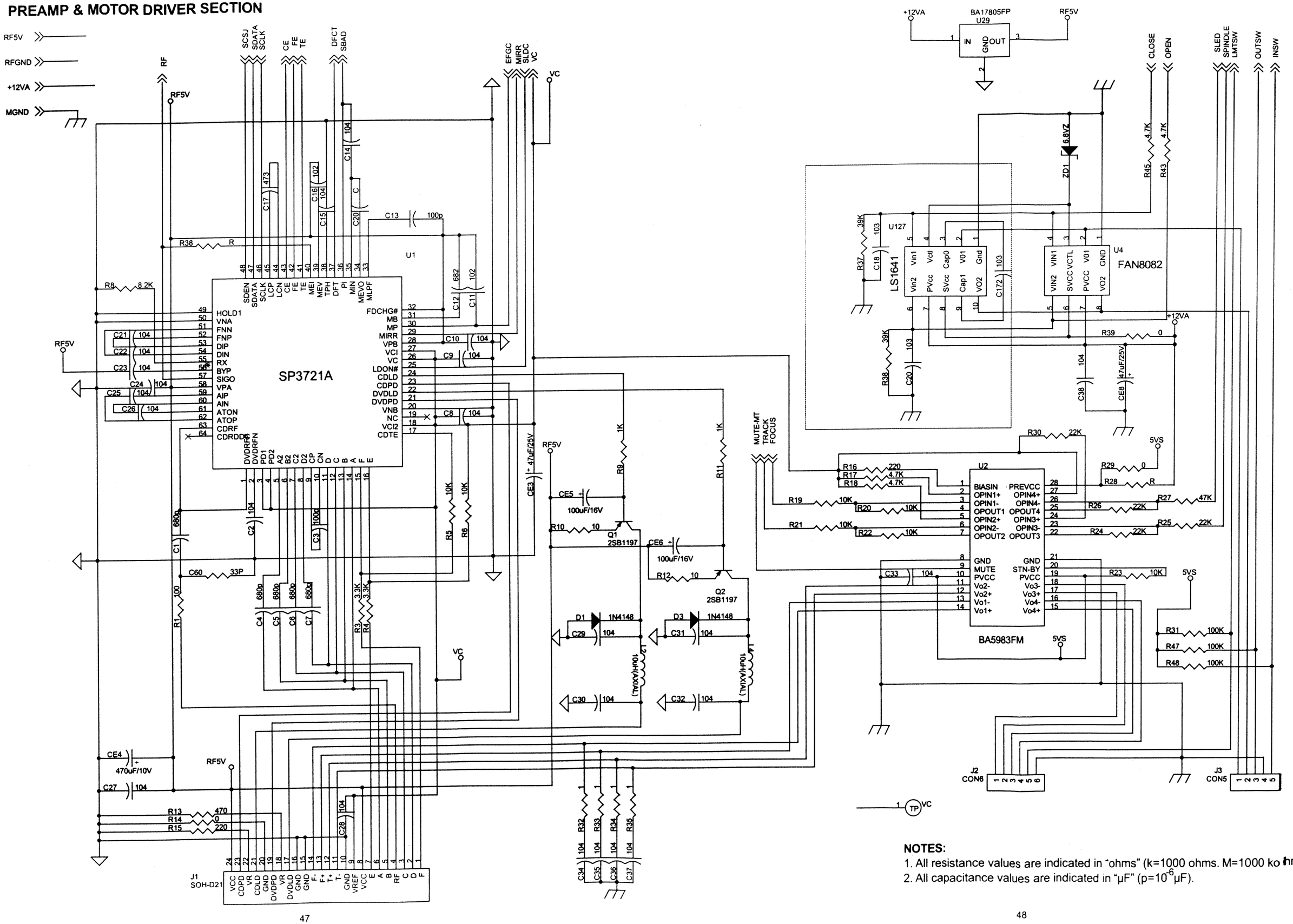
CHANNEL DECODER & U-COM SECTION



NOTES:

1. All resistance values are indicated in “ohms” (k=1000 ohms. M=1000 kohms).
2. All capacitance values are indicated in “μF” ($p=10^{-6}$μF).

PREAMP & MOTOR DRIVER SECTION

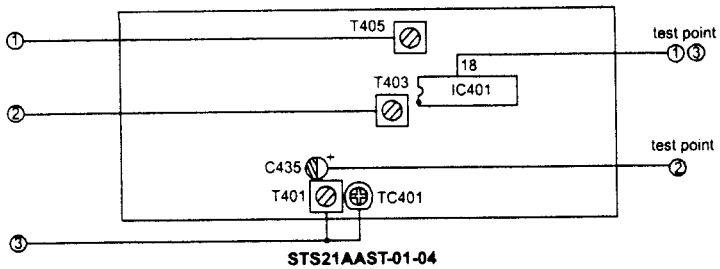


NOTES:

1. All resistance values are indicated in "ohms" (k=1000 ohms. M=1000 kohms).
2. All capacitance values are indicated in "μF" ($p=10^{-6}$μF).

ALIGNMENT SET-UP PROCEDURES

TUNER SECTION



STS21AAST-01-04

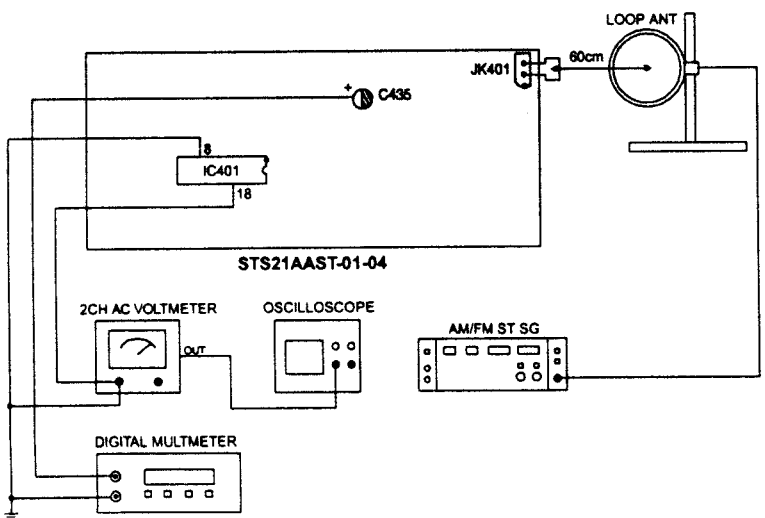
1. AM IF Adjustment
   Test point: IC401 (TA2099N)
   Adjustment location: T405
   T405 ---------- 450±3kHz

2. MW Frequency Range Adjustment
   Test point: C435 ⊕
   Adjustment location: T403
   Set the tuner frequency to be 531kHz.
   Adjust T403 so that the test point voltage is 1.7±0.05V.

3. MW Tracking Adjustment
   Test point: IC402 (TA2099N) 18PIN
   Adjustment location: T401, TC401
   T401 ---------- 603kHz waveform max.
   TC401 ---------- 1404kHz waveform max.

EQUIPMENT CONNECTION DIAGRAM

MW SECTION



VOLTAGE CHART

CPU & DISPLAY CONTROL SECTION

TEST CONDITION:DVD PLAY

IC301 (TMP87EP26F)

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10
DVD PLAY	0	2.43	2.15	4.75	0	0.24	0	4.01	4.61	0
PIN'S NUMBER	11	12	13	14	15	16	17	18	19	20
DVD PLAY	0.06	0.06	0.03	3.30	0.03	4.88	0.04	4.92	4.88	4.92
PIN'S NUMBER	21	22	23	24	25	26	27	28	29	30
DVD PLAY	4.92	4.88	0	4.92	4.88	0	3.30	4.92	0.04	4.89
PIN'S NUMBER	31	32	33	34	35	36	37	38	39	40
DVD PLAY	4.88	0.04	0.03	4.88	4.84	0.04	4.88	4.88	0	2.81
PIN'S NUMBER	41	42	43	44	45	46	47	48	49	50
DVD PLAY	4.88	4.02	4.88	4.88	0	2.44	0.16	4.87	0	0
PIN'S NUMBER	51	52	53	54	55	56	57	58	59	60
DVD PLAY	4.92	/	/	/	/	/	/	/	/	/
PIN'S NUMBER	61	62	63	64	65	66	67	68	69	70
DVD PLAY	/	/	/	/	/	/	/	/	/	/
PIN'S NUMBER	71	72	73	74	75	76	77	78	79	80
DVD PLAY	/	/	/	/	/	/	/	/	/	/
PIN'S NUMBER	81	82	83	84	85	86	87	88	89	90
DVD PLAY	/	/	/	/	/	/	/	/	/	/
PIN'S NUMBER	91	92	93	94	95	96	97	98	99	100
DVD PLAY	/	/	/	/	/	/	/	/	/	4.92

IC302 (TC74HC373AP)

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10
DVD PLAY	0.02	0.01	0.02	3.29	4.98	4.97	3.29	0.15	0	0
PIN'S NUMBER	11	12	13	14	15	16	17	18	19	20
DVD PLAY	4.29	0	0.15	0.15	0	0	0.15	0	0	4.99

TRANSISTOR	Q301(2SC1417)			Q302(DTC114ES)		
	E	C	B	E	C	B
DVD PLAY	0	0.24	0	0	4.21	0

IC304 (PT6311)

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10
DVD PLAY	2.18	2.09	1.95	1.94	4.33	4.99	0	4.99	4.99	2.01
PIN'S NUMBER	11	12	13	14	15	16	17	18	19	20
DVD PLAY	1.95	0	0	4.99	/	/	/	/	/	/
PIN'S NUMBER	21	22	23	24	25	26	27	28	29	30
DVD PLAY	/	/	/	/	/	/	/	/	/	/
PIN'S NUMBER	31	32	33	34	35	36	37	38	39	40
DVD PLAY	/	/	4.99	-25.10	/	/	/	/	/	/
PIN'S NUMBER	41	42	43	44	45	46	47	48	49	50
DVD PLAY	/	/	/	/	5.00	5.00	5.00	5.00	5.00	4.80
PIN'S NUMBER	51	52								
DVD PLAY	0	2.69								

VOLTAGE CHART - CONTINUED

POWER AMP. SECTION
TEST CONDITION: DVD PLAY

IC601 (TA8258H)

PIN'S NUMBER	1	2	3	4	5	6
DVD PLAY	1.45	0	0	0	1.44	9.55
PIN'S NUMBER	7	8	9	10	11	12
DVD PLAY	13.00	5.10	28.90	0	6.14	12.80

IC602 (TA8258H)

PIN'S NUMBER	1	2	3	4	5	6
DVD PLAY	1.45	0	0	0	1.44	9.55
PIN'S NUMBER	7	8	9	10	11	12
DVD PLAY	13.00	5.10	28.90	0	6.14	12.80

IC603 (TA8258H)

PIN'S NUMBER	1	2	3	4	5	6
DVD PLAY	1.45	0	0	0	1.44	9.55
PIN'S NUMBER	7	8	9	10	11	12
DVD PLAY	13.00	5.10	28.90	0	6.14	12.80

IC604 (NJM4558D)

PIN'S NUMBER	1	2	3	4	5	6	7	8
DVD PLAY	5.07	5.05	4.77	0	4.99	5.04	5.05	10.05

IC605 (PT2322-S)

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10
DVD PLAY	4.20	4.22	4.20	4.19	4.19	4.20	4.21	0	4.19	4.19
PIN'S NUMBER	11	12	13	14	15	16	17	18	19	20
DVD PLAY	4.20	4.21	4.22	4.21	4.22	4.22	4.22	4.22	4.22	8.46
PIN'S NUMBER	21	22	23	24	25	26	27	28		
DVD PLAY	4.22	4.22	4.23	4.32	4.32	0	4.21	4.22		

IC506 (BA4558N)

PIN'S NUMBER	1	2	3	4	5	6	7	8
DVD PLAY	1.08	1.08	0.90	0	1.07	1.13	1.13	1.64

IC502 (BA4558N)

PIN'S NUMBER	1	2	3	4	5	6	7	8
DVD PLAY	1.07	0.95	0.91	0	0.91	0.95	1.01	1.64

IC803 (BA05ST)

PIN'S NUMBER	1	2	3	4	5
DVD PLAY	4.20	7.86	0	5.00	0

IC802 (BA05ST)

PIN'S NUMBER	1	2	3	4	5
DVD PLAY	2.79	7.80	0	5.00	0

VOLTAGE CHART - CONTINUED

IC801 (LM78L05ACZ)

PIN'S NUMBER	1	2	3
DVD PLAY	5.68	0.60	11.48

TRANSISTOR	Q802(C1145ES)			Q803(C114ES)			Q804(A114)		
	E	C	B	E	C	B	E	C	B
DVD PLAY	0	2.08	0.13	0	0	2.08	14.18	13.80	0
TRANSISTOR	Q805(C1815)			Q806(B1566)			Q807(A1015)		
	E	C	B	E	C	B	E	C	B
DVD PLAY	9.95	13.41	10.47	14.11	10.65	13.56	14.09	13.65	13.08
TRANSISTOR	Q808(C8050)			Q809(C8550)			Q811(C114ES)		
	E	C	B	E	C	B	E	C	B
DVD PLAY	18.90	18.80	18.23	11.35	11.37	12.03	0	0	2.70
TRANSISTOR	Q812(A123)			Q813(C1815)			Q814(B1566)		
	E	C	B	E	C	B	E	C	B
DVD PLAY	14.02	14.04	0	11.50	13.55	12.05	14.16	12.21	13.43
TRANSISTOR	Q815(A1015)								
	E	C	B						
DVD PLAY	5.61	0	5.65						

MPEG+SERVO SECTION
TEST CONDITION: DVD PLAY

U16 (ZR36732PQC)

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10
DVD PLAY	0	0.00	3.30	3.30	3.27	3.27	3.27	3.27	2.16	0
PIN'S NUMBER	11	12	13	14	15	16	17	18	19	20
DVD PLAY	3.27	1.85	3.27	0	3.27	3.30	2.10	1.06	3.31	0.82
PIN'S NUMBER	21	22	23	24	25	26	27	28	29	30
DVD PLAY	1.63	1.40	1.39	1.23	1.49	3.30	1.15	1.21	1.78	1.54
PIN'S NUMBER	31	32	33	34	35	36	37	38	39	40
DVD PLAY	3.22	3.30	1.85	1.24	0	0.35	3.25	3.30	3.21	0
PIN'S NUMBER	41	42	43	44	45	46	47	48	49	50
DVD PLAY	0.49	0.54	0.53	3.30	0.44	0.45	0.35	0.49	0	0.37
PIN'S NUMBER	51	52	53	54	55	56	57	58	59	60
DVD PLAY	0.27	3.30	2.12	0.35	0.51	0	3.04	3.30	3.14	3.16
PIN'S NUMBER	61	62	63	64	65	66	67	68	69	70
DVD PLAY	3.23	3.19	1.85	0	0	1.75	3.30	1.71	0	1.35
PIN'S NUMBER	71	72	73	74	75	76	77	78	79	80
DVD PLAY	3.31	1.40	0	1.40	1.48	1.27	3.31	1.40	1.61	0
PIN'S NUMBER	81	82	83	84	85	86	87	88	89	90
DVD PLAY	1.63	1.53	3.29	0.52	1.71	0	2.30	1.71	3.29	0.64
PIN'S NUMBER	91	92	93	94	95	96	97	98	99	100
DVD PLAY	1.42	1.66	0.07	3.28	3.04	1.64	0	3.28	3.24	0.26
PIN'S NUMBER	101	102	103	104	105	106	107	108	109	110
DVD PLAY	0.77	1.25	1.03	3.28	1.12	1.47	0	1.22	0	0
PIN'S NUMBER	111	112	113	114	115	116	117	118	119	120
DVD PLAY	0	3.28	0.29	0	0	1.82	1.59	0	1.61	1.59
PIN'S NUMBER	121	122	123	124	125	126	127	128	129	130
DVD PLAY	1.82	3.29	0	3.29	0	3.28	1.70	0	0	3.29
PIN'S NUMBER	131	132	133	134	135	136	137	138	139	140
DVD PLAY	1.63	0	0	0	2.90	3.29	1.07	0	0	1.04
PIN'S NUMBER	141	142	143	144	145	146	147	148	149	150
DVD PLAY	1.64	3.29	1.82	0	0	0.50	0	0.53	0.53	0
PIN'S NUMBER	151	152	153	154	155	156	157	158	159	160
DVD PLAY	2.57	0	0	2.20	1.96	1.65	2.33	0	1.65	0

VOLTAGE CHART - CONTINUED

U11 (ZR36705TQC)

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10
DVD PLAY	0	0	3.29	3.29	3.29	3.38	3.29	3.30	3.29	3.29
PIN'S NUMBER	11	12	13	14	15	16	17	18	19	20
DVD PLAY	1.45	3.29	3.29	3.29	0	0	0	0	3.29	3.29
PIN'S NUMBER	21	22	23	24	25	26	27	28	29	30
DVD PLAY	2.86	0.67	3.30	3.29	3.86	3.86	5.07	5.07	3.37	3.20
PIN'S NUMBER	31	32	33	34	35	36	37	38	39	40
DVD PLAY	3.15	3.43	3.32	4.67	2.35	3.43	1.85	1.93	3.16	0
PIN'S NUMBER	41	42	43	44	45	46	47	48	49	50
DVD PLAY	3.80	2.40	3.29	1.80	0.06	1.22	0.05	0	0	0
PIN'S NUMBER	51	52	53	54	55	56	57	58	59	60
DVD PLAY	0	0	0	0	0	0	0	0	1.60	2.53
PIN'S NUMBER	61	62	63	64	65	66	67	68	69	70
DVD PLAY	3.29	3.29	3.29	3.29	0	5.04	0.04	3.29	5.05	3.29
PIN'S NUMBER	71	72	73	74	75	76	77	78	79	80
DVD PLAY	0	3.29	3.11	3.11	2.03	5.05	5.05	3.29	5.05	5.05
PIN'S NUMBER	81	82	83	84	85	86	87	88	89	90
DVD PLAY	5.05	3.30	3.29	3.29	3.27	0.53	2.91	3.63	0.00	1.43
PIN'S NUMBER	91	92	93	94	95	96	97	98	99	100
DVD PLAY	1.50	3.29	0.15	3.29	3.29	3.29	3.29	3.29	4.32	0.02

U12 (S-24C01BFS)

PIN'S NUMBER	1	2	3	4	5	6	7	8
DVD PLAY	0	0	0	0	3.75	0	0	4.94

U13 (SST39VF800A)

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10
DVD PLAY	0.70	0.50	0.60	0.70	0.60	2.80	0	2.82	0	0
PIN'S NUMBER	11	12	13	14	15	16	17	18	19	20
DVD PLAY	3.20	3.30	0	0	0	0.40	0.70	2.50	2.30	0.40
PIN'S NUMBER	21	22	23	24	25	26	27	28	29	30
DVD PLAY	0.65	1.00	1.00	1.92	1.45	0	0	1.26	1.28	1.44
PIN'S NUMBER	31	32	33	34	35	36	37	38	39	40
DVD PLAY	1.58	0.64	1.50	1.22	1.25	1.08	3.30	0	0.74	0.71
PIN'S NUMBER	41	42	43	44	45	46	47	48		
DVD PLAY	0	1.04	0.81	2.04	1.70	0	3.30	0.19		

U17 (K4S161622D)

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10
DVD PLAY	3.30	1.45	0.70	0	0.77	0.75	3.30	2.10	0.82	0
PIN'S NUMBER	11	12	13	14	15	16	17	18	19	20
DVD PLAY	0.78	0.90	3.30	0	3.19	3.23	3.16	3.08	0.52	1.74
PIN'S NUMBER	21	22	23	24	25	26	27	28	29	30
DVD PLAY	0	0	0.45	0	3.30	0	0.55	0.55	0.53	0.55
PIN'S NUMBER	31	32	33	34	35	36	37	38	39	40
DVD PLAY	0.26	0.30	0	3.30	1.73	0	0	3.30	1.45	1.23
PIN'S NUMBER	41	42	43	44	45	46	47	48	49	50
DVD PLAY	0	1.20	1.15	3.30	1.65	1.16	0	1.16	0.86	0

U25 (WM8739EDS)

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10
DVD PLAY	3.76	0	1.68	0.25	3.15	0	3.15	1.65	0.37	0.69
PIN'S NUMBER	11	12	13	14	15	16	17	18	19	20
DVD PLAY	0.97	1.65	0	3.15	0	1.56	1.56	1.57	0	0

VOLTAGE CHART - CONTINUED

U31 (WM8746EDS)

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10
DVD PLAY	4.32	1.68	1.65	1.65	1.66	1.65	1.65	0	0	1.65
PIN'S NUMBER	11	12	13	14	15	16	17	18	19	20
DVD PLAY	0	3.30	0	3.75	4.35	2.17	2.18	0	2.18	0
PIN'S NUMBER	21	22	23	24	25	26	27	28		
DVD PLAY	2.18	0	2.18	0	2.18	0	2.18	4		

U22 (NJM4580E)

PIN'S NUMBER	1	2	3	4	5	6	7	8
DVD PLAY	0	0	0	10.43	0	0	0	11.23

U23 (NJM4580E)

PIN'S NUMBER	1	2	3	4	5	6	7	8
DVD PLAY	0	0	0	10.43	0	0	0	11.23

U24 (NJM4580E)

PIN'S NUMBER	1	2	3	4	5	6	7	8
DVD PLAY	0	0	0	10.43	0	0	0	11.23

U26 (74HCU04AF)

PIN'S NUMBER	1	2	3	4	5	6	7
DVD PLAY	2.03	2.10	2.10	2.16	2.16	2.15	0
PIN'S NUMBER	8	9	10	11	12	13	14
DVD PLAY	3.16	2.15	2.16	2.15	2.16	2.15	4.32

U7 (W29EE512P-70)

PIN'S NUMBER	1	2	3	4	5	6	7	8
DVD PLAY	0	0	1.65	1.88	2.10	2.09	1.59	1.75
PIN'S NUMBER	9	10	11	12	13	14	15	16
DVD PLAY	2.00	1.96	1.97	1.96	1.61	1.86	1.69	0
PIN'S NUMBER	17	18	19	20	21	22	23	24
DVD PLAY	1.43	1.65	2.00	0	1.76	0	1.80	1.70
PIN'S NUMBER	25	26	27	28	29	30	31	32
DVD PLAY	1.25	1.81	1.77	0.70	2.24	0	3.33	4.91

U1 (M5703T/SP3721A)

PIN'S NUMBER	1	2	3	4	5	6	7	8
DVD PLAY	3.56	3.56	2.51	2.51	3.50	3.50	3.50	3.50
PIN'S NUMBER	9	10	11	12	13	14	15	16
DVD PLAY	3.52	0	0	2.54	2.54	2.57	3.01	2.53
PIN'S NUMBER	17	18	19	20	21	22	23	24
DVD PLAY	4.29	2.51	0	0	0.17	3.33	0	5.00
PIN'S NUMBER	25	26	27	28	29	30	31	32
DVD PLAY	0	2.51	2.51	5.01	0.12	2.73	2.56	5.01
PIN'S NUMBER	33	34	35	36	37	38	39	40
DVD PLAY	0	4.24	0	3.20	0	3.34	4.95	3.23
PIN'S NUMBER	41	42	43	44	45	46	47	48
DVD PLAY	2.52	2.49	1.83	4.28	3.96	3.33	0	0
PIN'S NUMBER	49	50	51	52	53	54	55	56
DVD PLAY	0	0	2.50	2.52	0	3.47	0.59	2.34
PIN'S NUMBER	57	58	59	60	61	62	63	64
DVD PLAY	2.98	5.01	3.53	3.53	3.80	3.80	3.54	1.41

VOLTAGE CHART - CONTINUED

U5 (M5705)

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10
DVD PLAY	0	2.50	2.48	5.01	2.49	2.51	3.34	1.26	2.49	3.12
PIN'S NUMBER	11	12	13	14	15	16	17	18	19	20
DVD PLAY	2.56	2.48	2.51	5.01	2.11	0	0.10	2.51	2.51	2.51
PIN'S NUMBER	21	22	23	24	25	26	27	28	29	30
DVD PLAY	2.52	0	2.52	2.49	1.95	5.01	3.21	0	0	0
PIN'S NUMBER	31	32	33	34	35	36	37	38	39	40
DVD PLAY	3.34	0	0	2.62	3.34	0	0	0	3.34	1.65
PIN'S NUMBER	41	42	43	44	45	46	47	48	49	50
DVD PLAY	4.86	0	0	4.86	0	0	2.62	3.33	2.59	3.31
PIN'S NUMBER	51	52	53	54	55	56	57	58	59	60
DVD PLAY	2.60	2.60	0	0	0	2.59	1.66	0	0	0
PIN'S NUMBER	61	62	63	64	65	66	67	68	69	70
DVD PLAY	0	1.59	1.89	1.72	0.22	1.70	2.01	2.01	1.76	2.62
PIN'S NUMBER	71	72	73	74	75	76	77	78	79	80
DVD PLAY	2.59	0	0	0	1.78	3.34	1.82	1.82	2.14	2.10
PIN'S NUMBER	81	82	83	84	85	86	87	88	89	90
DVD PLAY	1.51	1.75	2.00	1.97	1.97	1.98	1.91	0	0.60	2.23
PIN'S NUMBER	91	92	93	94	95	96	97	98	99	100
DVD PLAY	1.63	2.60	3.30	3.09	1.05	1.53	2.60	1.90	0.10	0
PIN'S NUMBER	101	102	103	104	105	106	107	108	109	110
DVD PLAY	4.09	3.99	1.25	0	0	1.71	1.35	0	1.58	0
PIN'S NUMBER	111	112	113	114	115	116	117	118	119	120
DVD PLAY	0.88	1.26	0.75	1.30	3.34	0	1.68	0	0.99	0.66
PIN'S NUMBER	121	122	123	124	125	126	127	128	129	130
DVD PLAY	0	0	0	0	0	1.89	1.90	0	1.81	0
PIN'S NUMBER	131	132	133	134	135	136	137	138	139	140
DVD PLAY	1.81	1.58	0	1.83	0	1.94	1.89	0	0	0
PIN'S NUMBER	141	142	143	144	145	146	147	148	149	150
DVD PLAY	0	0	1.70	0	3.09	3.34	0	0	0.30	0
PIN'S NUMBER	151	152	153	154	155	156	157	158	159	160
DVD PLAY	0	0	0	0	0.25	0.20	0	0	0	0
PIN'S NUMBER	161	162	163	164	165	166	167	168	169	170
DVD PLAY	0	3.34	0.12	0.11	0	2.51	2.51	0	2.68	0
PIN'S NUMBER	171	172	173	174	175	176				
DVD PLAY	2.51	2.51	2.51	2.51	2.51	1.75				

U3 (BA033FP)

PIN'S NUMBER	1	2	3
DVD PLAY	4.95	0	3.35

U9 (XC61AN1902MR)

PIN'S NUMBER	1	2	3
DVD PLAY	4.88	3.47	0

U2 (BA5983FM)

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10
DVD PLAY	2.49	2.51	2.51	2.46	2.51	0	2.53	0	3.32	4.88
PIN'S NUMBER	11	12	13	14	15	16	17	18	19	20
DVD PLAY	2.40	2.53	2.51	2.41	2.24	2.08	3.52	0.76	4.88	3.68
PIN'S NUMBER	21	22	23	24	25	26	27	28		
DVD PLAY	0	2.84	2.51	2.51	2.48	2.51	2.51	4.90		

VOLTAGE CHART - CONTINUED

U29 (BA17805FP)

PIN'S NUMBER	1	2	3
DVD PLAY	11.44	0	5.02

U127 (LS1641)

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10
DVD PLAY	0	0.53	0.73	0.74	1.14	1.31	12.17	12.17	0.74	0.54

U27 (LD1117S)

PIN'S NUMBER	1	2	3	4
DVD PLAY	1.85	1.85	3.31	0.59

U28 (LD1117S33C)

PIN'S NUMBER	1	2	3	4
DVD PLAY	0	3.30	4.95	3.30

U6 (M11B416256A-35J)

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10
DVD PLAY	4.94	1.54	1.54	1.10	1.30	4.95	0.80	0.56	0.65	0.54
PIN'S NUMBER	11	12	13	14	15	16	17	18	19	20
DVD PLAY	0	0	3.33	3.31	0	0.10	0.20	0.11	0.15	4.94
PIN'S NUMBER	21	22	23	24	25	26	27	28	29	30
DVD PLAY	0	0.24	0.25	0.30	0.23	0.33	0.22	3.18	3.21	0
PIN'S NUMBER	31	32	33	34	35	36	37	38	39	40
DVD PLAY	1.97	1.94	1.94	1.95	0	1.83	1.85	0	1.93	0

TUNER SECTION

TEST CONDITION: SET AM/FM ON ONE FREQUENCY

IC403 (BU1923F)

PIN'S NUMBER	1	2	3	4	5	6	7	8
FM	2.13	2.41	2.30	2.27	4.30	0	0	2.29
PIN'S NUMBER	9	10	11	12	13	14	15	16
FM	0	0	0	4.30	0	2.06	0	2.25

IC401 (TA2099N)

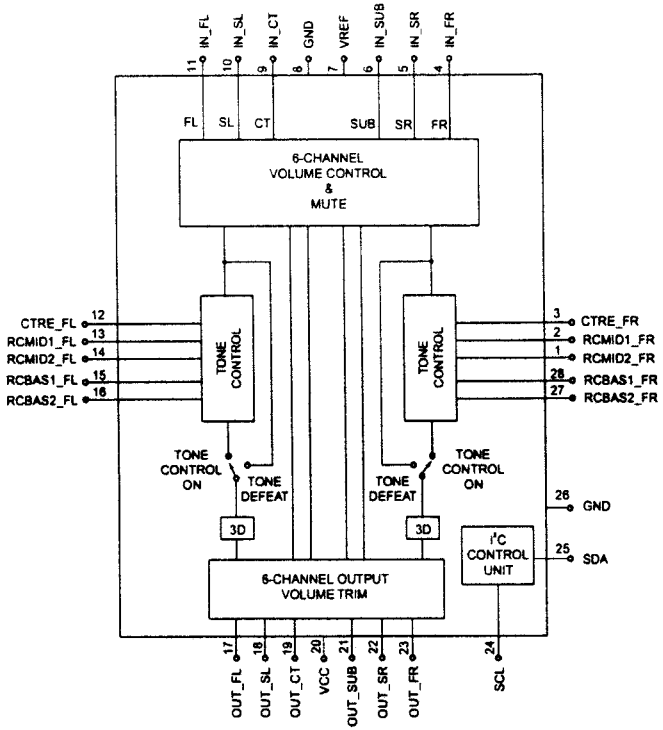
PIN'S NUMBER	1	2	3	4	5	6	7	8
AM	1.97	2.72	0.11	1.97	1.34	6.37	0.48	0
FM	1.95	2	0	2	0.97	7.43	1.29	0
PIN'S NUMBER	9	10	11	12	13	14	15	16
AM	4.96	0.04	5.68	0.76	0.77	0.11	4.89	4.92
FM	4.98	4	4.13	0.77	0.77	0.00	0.52	0.65
PIN'S NUMBER	17	18	19	20	21	22	23	24
AM	1.19	0.48	2.05	1.81	1.97	1.97	6.43	1.97
FM	1.19	1.32	1.99	2.44	1.97	1.97	7.40	1.97

IC402 (TC9257F)

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10
AM	2.45	2.47	4.29	4.29	0.01	0.14	0.02	0.11	0.02	0.02
FM	2.38	2.41	4.97	4.97	0	0.14	0	0.11	0	0
PIN'S NUMBER	11	12	13	14	15	16	17	18	19	20
AM	4.97	4.97	0	2.43	0	2.44	1.44	1.37	1.15	1.14
FM	0	0	0	2.36	0	2.36	0.17	0.17	0.76	1.08

IC BLOCK DIAGRAMS & IC PINS DESCRIPTION

IC605 PT2322-S



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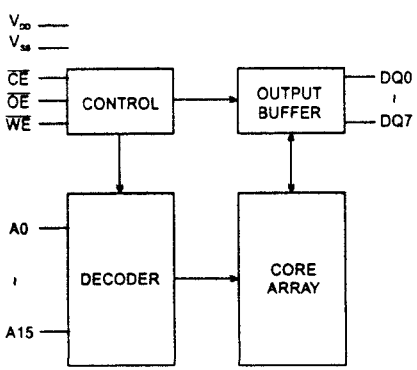
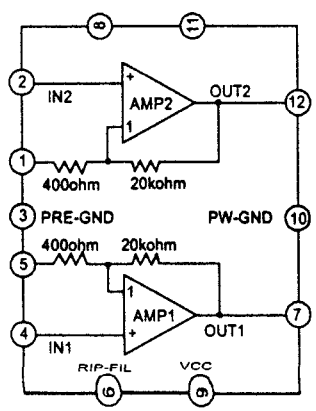


IC601, IC602, IC603 TA8258H



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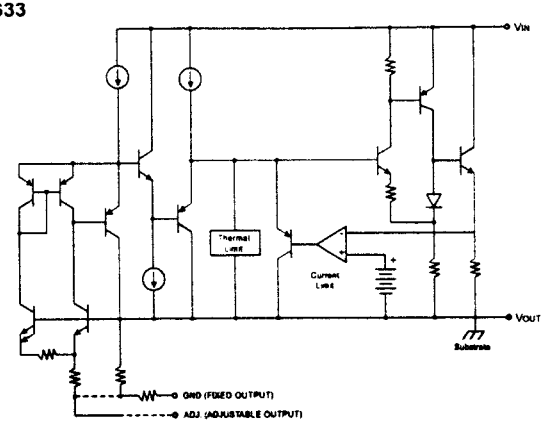
U28 LD1117S33



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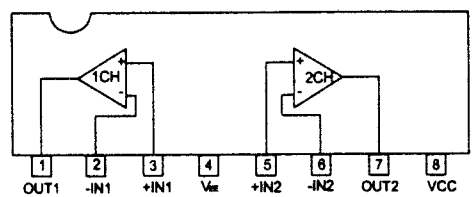

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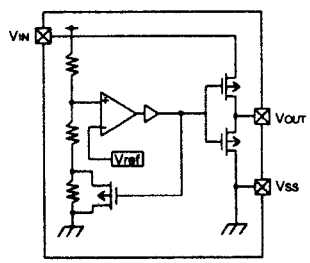

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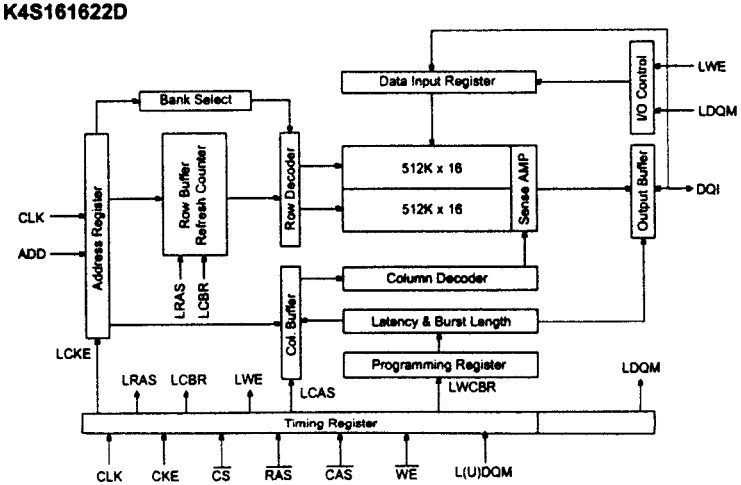
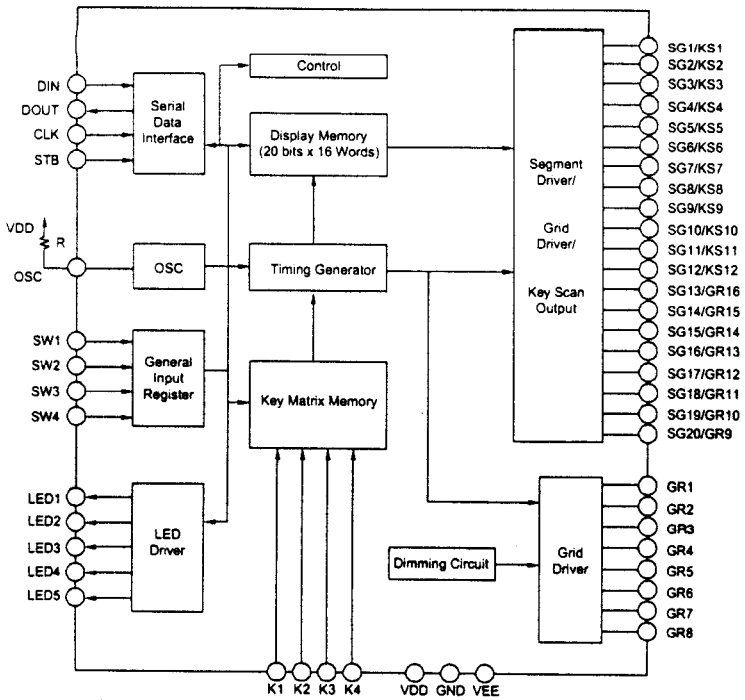
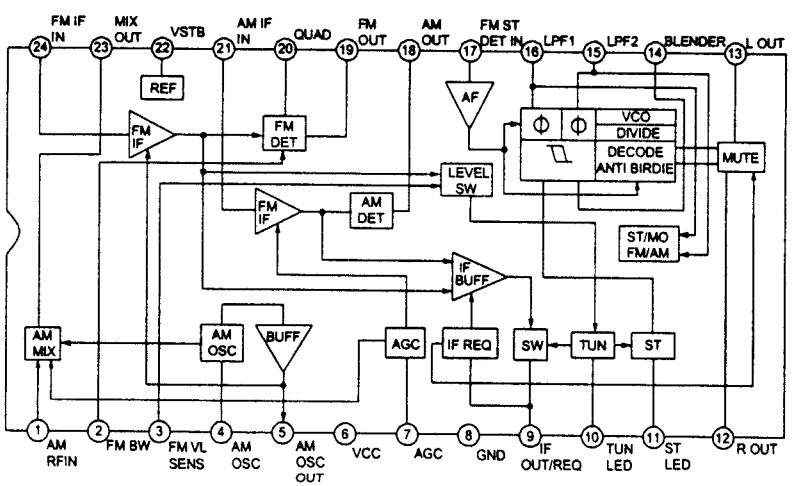


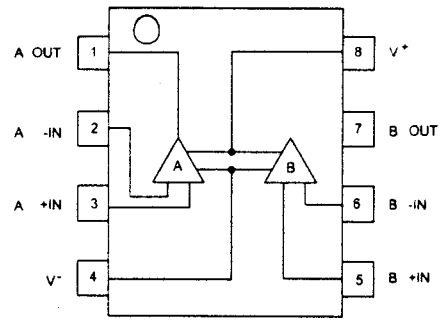
IC304 PT6311



IC401 TA2099N



U22, U23, U24 NJM4580E



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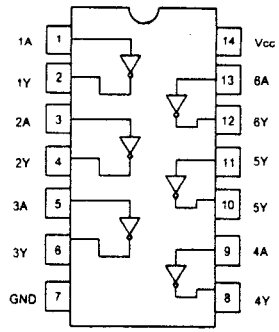
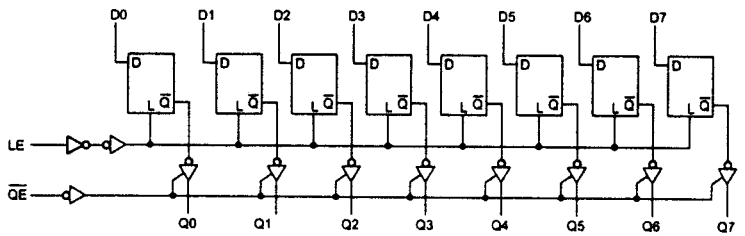
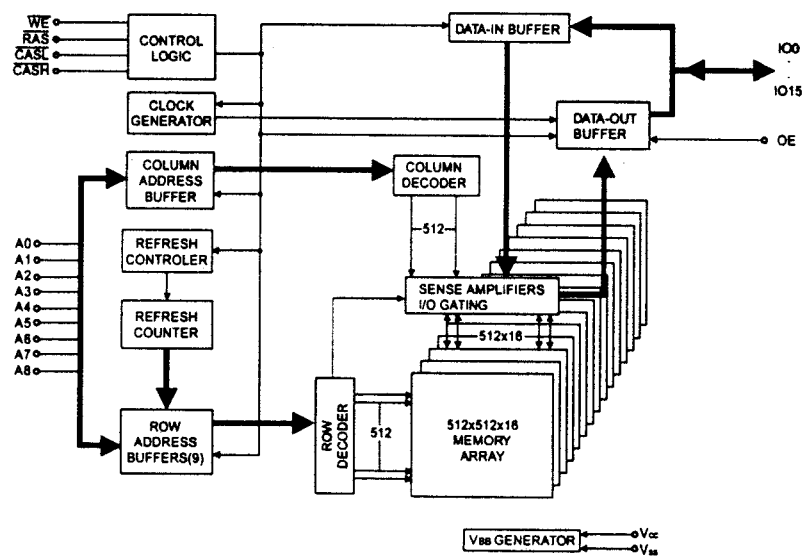


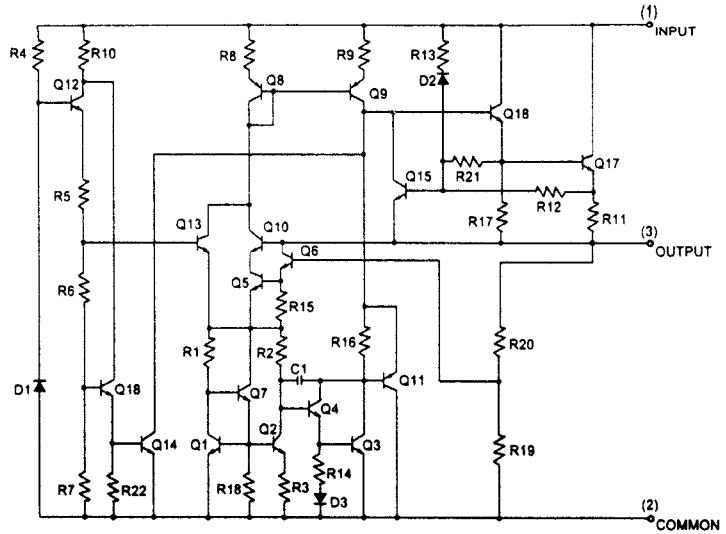
IC302 TC74HC373AF



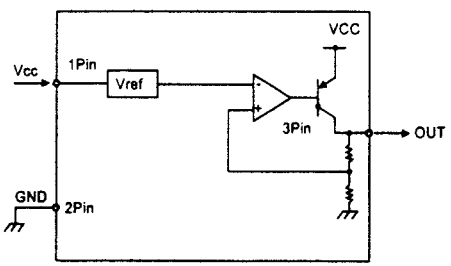
U6 M11B416256A



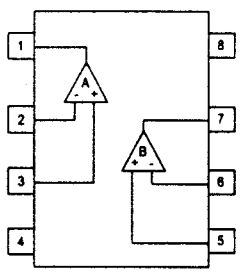
U29 BA17805FP



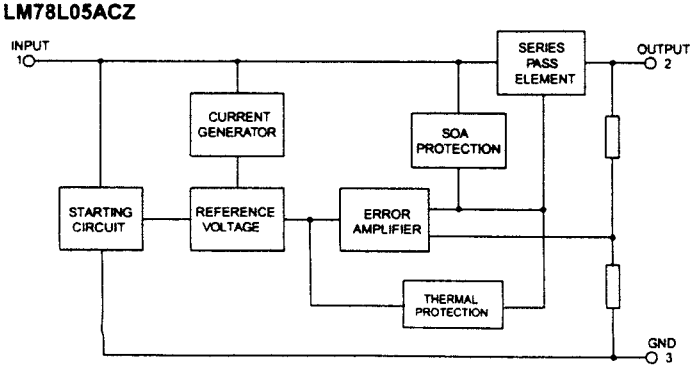
U3 BA033FP



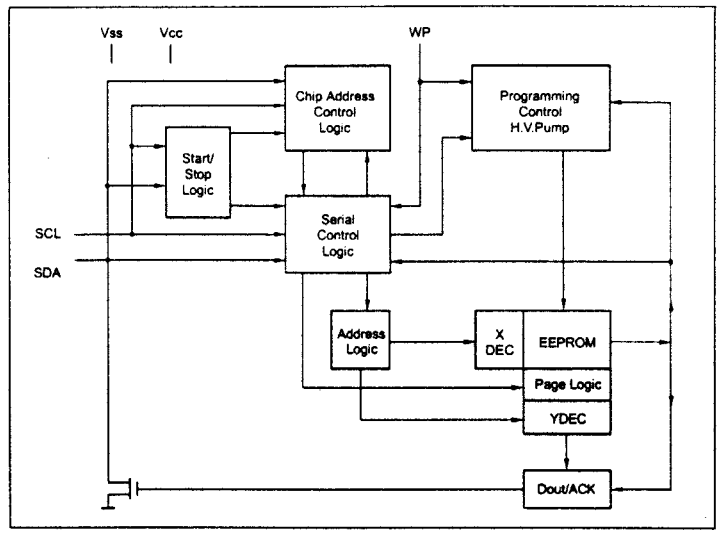
IC604 NJM4558D



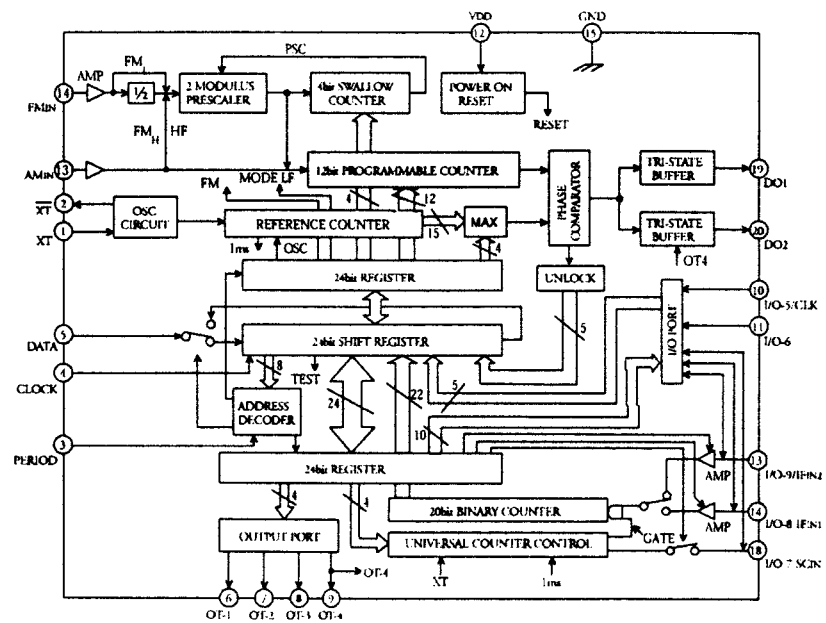
IC801 LM78L05ACZ



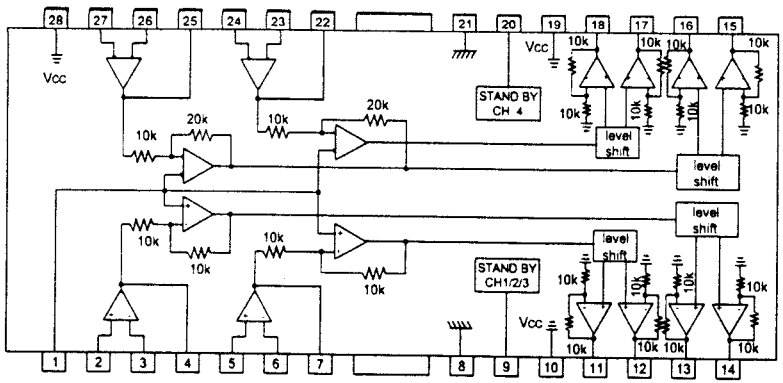
U12 AT24C01A/S-24C01BFJ



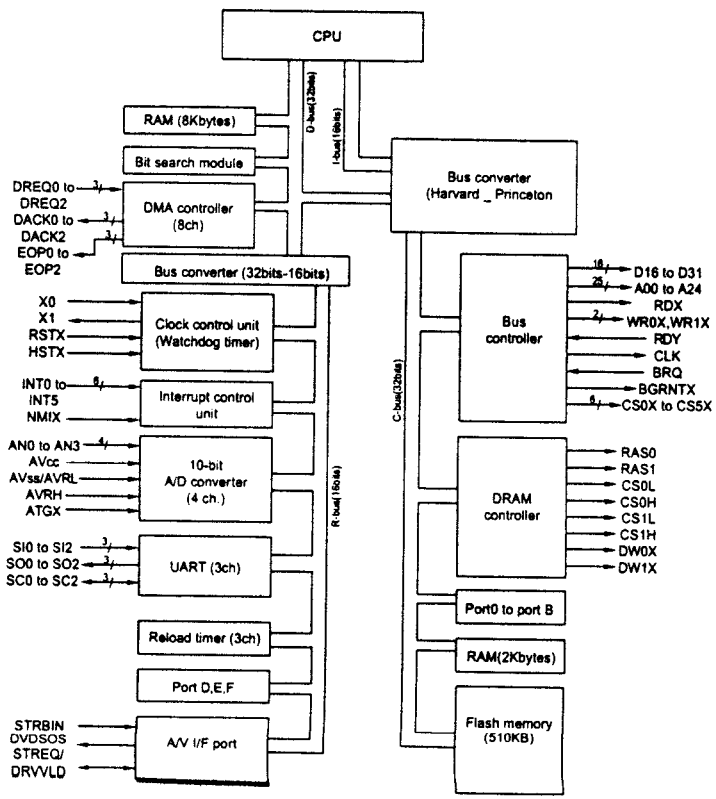
IC402 TC9257F



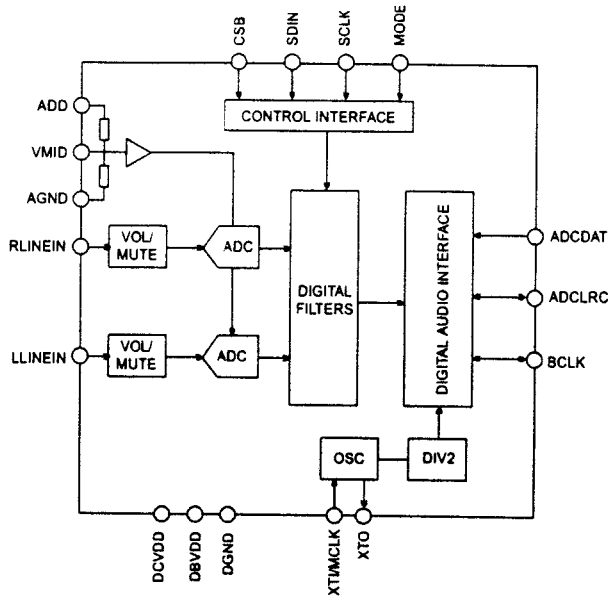
U2 BA5983FM



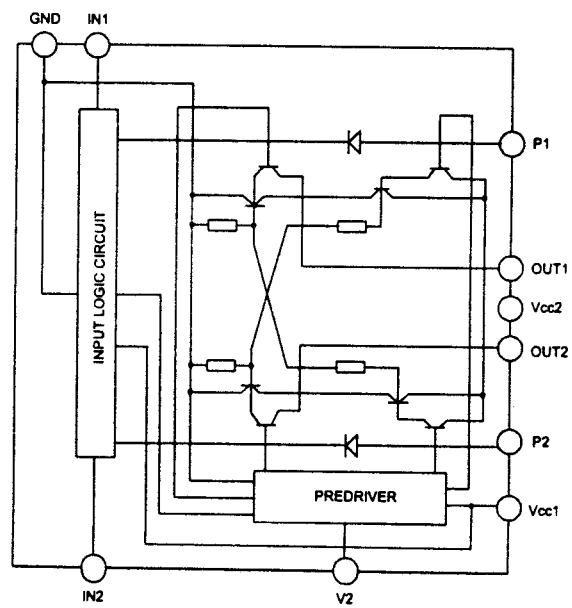
U11 ZR36705TQC



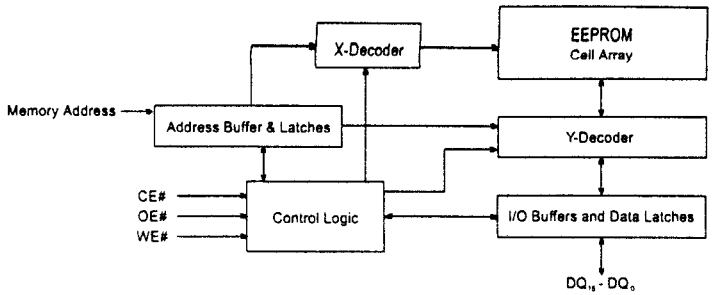
U25 WM8739



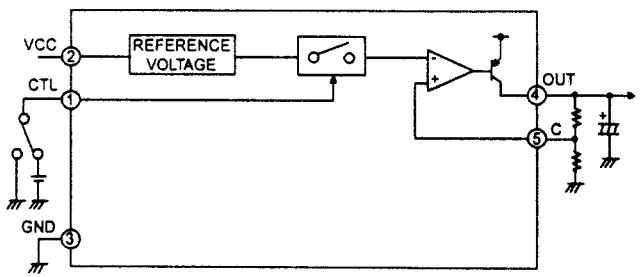
U127 LS1641



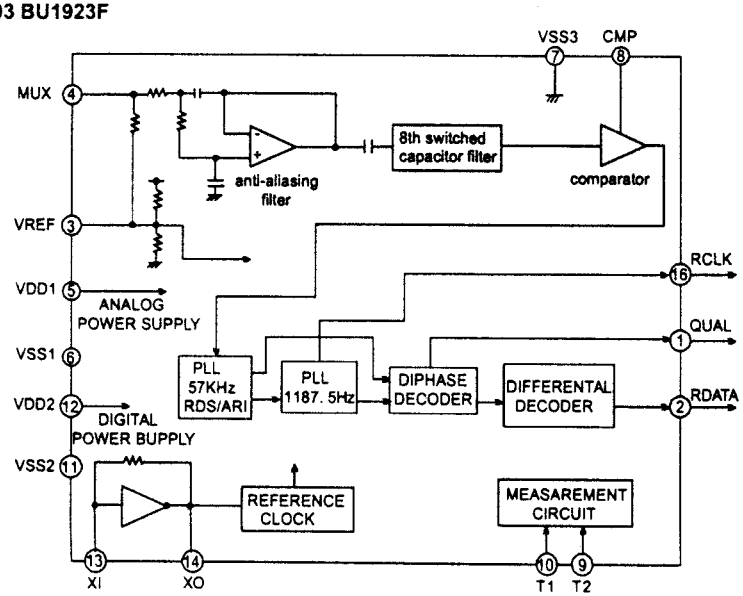
U13 SST39VF800A



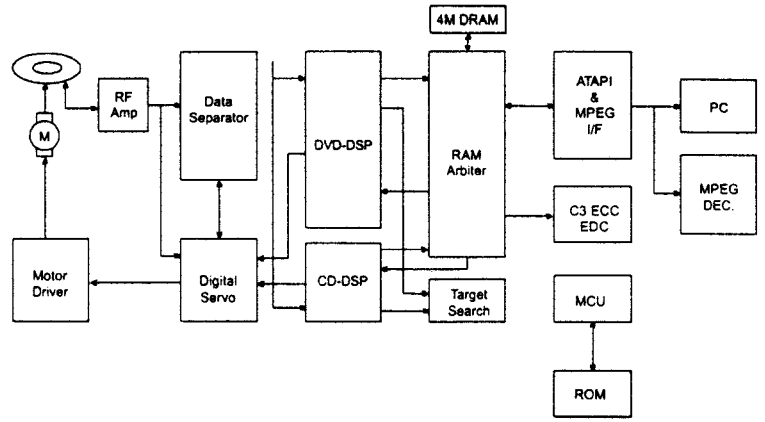
IC802, IC803 BA05ST



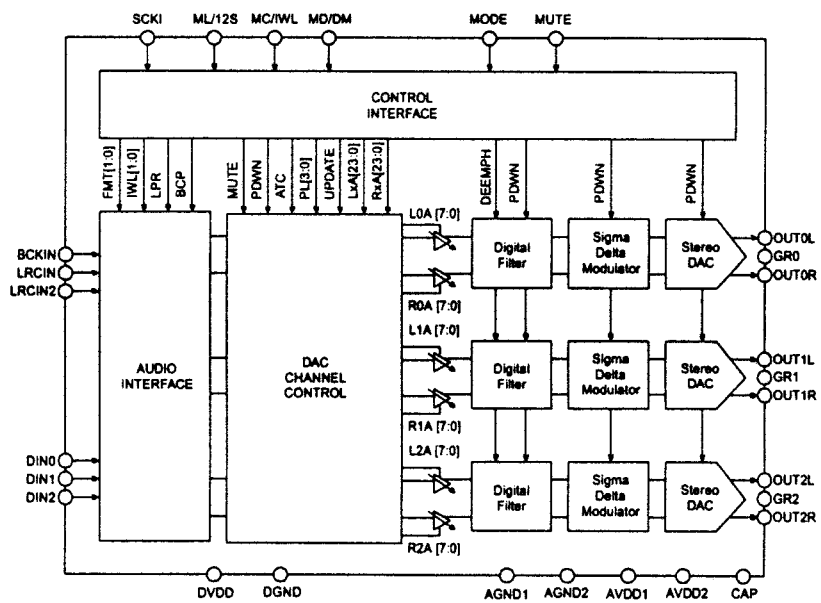
IC403 BU1923F



U5 M5705



U31 WM8746EDS



IC301 TMP-87EP26F PINS DESCRIPTION

Pin	Port Nome	Pin Name	Description
1	VSS	VSS	Ground
2	XOUT	XOUT	8MHz
3	XIN	XIN	8MHz
4	/RESET	RESET	
5	P2.2 (XTOUT)	CS	CS to Display driver
6	P2.1 (XTIN)	CLK	Clock to Display driver
7	TEST	TEST	
8	P2.0 (INT5/STOP)	STOP*	Poewer Down detector
9	P4.0 (INT3/TC3)	IR*	Remote controller
10	P4.1 (PWM/PDO)	CLKSHIFT	Clock shift on tuner
11	P4.2 (/SCK1)	RDSCLK*	RDS Clock input pin
12	P4.3 (SI1)	REDSDAT*	RDS Data input pin
13	P4.4 (SO1)	Tuner/-DVD	Selection of Tuner or DVD
14	P4.5 (/SCK2)	DVD-VCLK*	DVD VFD Clock pin
15	P4.6 (SI2)	DVD-VDAT*	DVD VFD Data pin
16	P4.7 (SO2)		
17	P0.0	/OE	373 OE pin
18	P0.1	LE	373 LE pin
19	P0.2	DOUT	Data input from Display Driver
20	P0.3	PLL-CLK	Tuner Clock pin
21	P0.4	PLL-PERIOD	Tuner Period pin
22	P0.5	STEREO	Tuner STEREO input pin
23	P0.6	DVD-ACT	(Not used)
24	P0.7	DVD-IR	IR signal to DVD
25	P1.0 (/INT0)	SHORT-CIRCUIT	Speaker Short circuit detect
26	P1.1 (INT1)		
27	P1.2 (INT2/TC1)	DVD-VCS	DVD CS to Display driver
28	P1.3 (DVO)	CH-MUTE	
29	P1.4 (PPG)	AUX	Channel Mute pin
30	P1.5 (TC2)	DVD-PWR	AUX Channel Selection
31	P1.6	MAIN-PWR	DVD Power control pin
32	P1.7	SYSMUTE	Main Power control pin
33	P3.0	VRDDIN	System Mute
34	P3.1	VFDCS	Data output to Display driver
35	P3.2	VFDCLK	Clock to Display driver
36	P3.3	PLL-DATA	Tuner Data pin
37	P3.4	SCL	I2C Clock pin for Volume IC
38	P3.5	SDA	I2C Data pin for Volume IC
39	P3.6	CH-MUTE	Channel mute pin
40	P5.0 (AIN0)	COUNTRY	Tuner Country selection
41	P5.1 (AIN1)	SIGNAL-DET	Tuner Signal Strength detection
42	P5.2 (AIN2)	JOG-VOL+	Jogger Volume +
43	P5.3 (AIN3)	JOG-VOL-	Jogger Volume -
44	P5.4 (AIN4)	KEY0	Keyboard
45	P5.5 (AIN5)		
46	P5.6 (AIN6)	AM-STEP	Tuner AM Step selection
47	P5.7 (AIN7)		
48	VAREF	VAREF	Analog VCC
49	BOOT	BOOT (H-Program)	Program Data to EEPROM
50	VSS	VSS	Ground

U1 M5703T PINS DESCRIPTION

Pin. No.	Pin Name	Type	Description
Input Pins:			
1,2	DVDRFP DVDRFN	I	RF Signal Inputs. Differential RF signal attenuator input pin.
63	CDRF	I	RF Signal input. Single-ended RF signal attenuator input pin
59,60	AIP,AIN	I	AGC Amplifier Inputs. Differential AGC amplifier input pins.
53,54	DIP,DIN	I	Analog inputs for RF single Buffer. Differential analog inputs to the RF single-ended output buffer and full wave rectifier.
32	FDCHG#	I	Low Impedance Enable. A TTL compatible input pin that activates the FDCHG switches. A low level activates the switches and the falling edge of the internal FDCHG triggers the fast decay for the MIRR bottom hold circuit. (open high)
49	HOLD1	I	Hold Control. A TTL compatible control pin which, when pulled high, disables the RF AGC charge pump and holds the RF AGC amplifier gain at its present value. (open high)
14-11	A,B,C,D	I	Photo Detector Interface Inputs. Inputs from the main beam photo detector matrix outputs.
8-5	A2,B2,C2,D2	I	photo Detector Interface Inputs. AC coupled inputs for the DPD from the main beam photo detector matrix outputs.
16-15	E,F	I	CD tracking Error Inputs. Inputs from the CD photo detector error outputs.
3-4	PD1,PD2	I	CD photodetector interface inputs. From the CD photo detector error outputs.
40	MEI	I	Mirror Envelope Input.The SIGO envelope input pin.
35	MIN	I	RF signal input for Mirror.AC coupled inputs for the mirror detection circuit from, the pull-in signal output. (PI)
21	DVDPD	I	APC Input. DVD APC input pin from the monitor photo diode.
23	CDPD	I	APC Input. CD APC input pin from the monitor photo diode.
25	LDON#	I	APC Output On/Off. APC output control pin. A low level activates the LD output. (open high)
Output Pins:			
62,61	ATOP/ATON	O	Differential Attenuator Output.Attenuator outputs.
52,51	FNP,FNN	O	Differential Normal Output. Filter normal outputs.
57	SIGO	O	Single Ended Normal Output. Single-ended RF output.
64	CDRFDC	O	CD RF Signal Output.Single ended CD RF summing output.
42	FE	O	Focusing Error Signal Output. Focus error output-reference to VCI.
41	TE	O	Tracking Error Signal Output. Tracking error output reference to VCI.
43	CE	O	Center Error Signal Output. Center error output reference to VCI.
34	MEVO	O	SIGO Bottom Envelope Output. Bottom envelope for Mirror detection.
37	DFT	O	Defect Output. Pseudo CMOS output. When a defect is detected,the DFT output goes high. Also the servo AGC output can be monitored at this pin,when CAR bits 7-4 are '0011'.
29	MIRR	O	Mirror Detect Output. Mirror Detect comparator output. Pseudo CMOS output.
36	PI	O	Pull-in Signal Output.The summing signal output of A,B,C,D or PD1,PD2 for mirror detection. Reference to VCI.
22	DVDLD	O	APC output DVD APC output pin to control the laser power.
24	CDLD	O	APC output CD APC output pin to control the laser power.
Analog Pins:			
56	BYP	I/O	The RF AGC integration capacitor CBYP, is connected between BYP and VPA.
9	CP	I/O	Differential Phase tracking LPF pin. An external capacitance is connected between this pin and the CN pin.
10	CN	I/O	Differential Phase tracking LPF pin. An external capacitance is connected between this pin and the CP pin.
45	LCP	-	Center Error LPF Pin.An external capacitance is connected between this pin and the LCN pin.
44	LCN	-	Center Error LPF Pin. An external capacitance is connected between this pin and the LCP pin.
30	MP	-	MIRR signal Peak hold pin. An external capacitance is connected to between this pin and VPB.
31	MB	-	MIRR signal Bottom hold pin. An external capacitance is connected to between this pin and VPB.
39	MEV	-	Sigo Bottom Envelope pin. An external capacitance is connected between this pin and VPB.

U1 M5703T PINS DESCRIPTION - CONTINUED

Pin. No.	Pin Name	Type	Description
17	CDTE	-	CD Tracking. E-F Opamp output for feedback.
38	TPH	-	PI Top Hold pin. An external capacitance is connected between this pin and VPB.
26	VC	-	Reference Voltage output. This pin provides the internal DC bias reference voltage (+2.5V flx). Output impedance is less than 50ohms.
27	VC1	-	Reference Voltage input. DC bias voltage input for the servo input reference.
18	VC12	-	Reference Voltage Input. DC bias voltage input for the servo input reference.
55	RX	-	reference Resistor Input. An external 8.2 kohm, 1% resistor is connected from this pin to ground to establish a precise PTAT (proportional to absolute temperature) reference current for the filter.
33	MLPF	-	MIRR signal LPF pin An external capacitance is connected between this pin and VPB.
19	NC	-	No Connect.
Serial Port Pins:			
48	SDEN	I	Serial Data Enable. Serial Enable CMOS input.A high level input enables the serial port. (not to be left open)
47	SDATA	I/O	Serial Data.Serial data bi-directional CMOS Pin. NRZ programming data for the internal registers is applied to this input. (Not to be left open).
46	SCLK	I	Serial Clock Serial Clock CMOS input. The clock applied to this pin is synchronized with the data applied to DSATA. (Not to be left open)
Power Pins:			
58	VPA		Power. Power supply pin for the RF block and serial port.
28	VPB		Power. Power supply pin for the servo block.
50	VNA		Ground. Ground pin for the RF block and serial port.
20	VNB		Ground. Ground pin for the servo block.

U16 ZR36732PQC PINS DESCRIPTION

Pin No.	Pin Name	Type	Description
Reset, Standby and Idle Status Interface			
124	RESET#	I	Reset input. Once de-asserted, the Decoder starts the initialization process.
122	STNDBY#	I	Stand-by input. When asserted together with RESET#, all outputs and bidirectional pins float, such that the Decoder is electrically disconnected from its surroundings. All internal clocks are disabled, and the power consumption is minimized.
160	IDLE	3-S	Idle, Init and Reset states indication output.
Host Interface			
2	HWID	I	Determines the width of the host interface data bus.It is allowed to be changed only during RESET. A low level (GNDP) Configures the Decoder to an 8-bit host data interface, a high level (VDDP) to 16-bit width.
1	HORD	I	Determines the order of bytes on the host interface data bus in case of 16-bit width (HWID at VDDP). It is allowed to be changed only during RESET. A low level (GNDP) configures the Decoder to input/output the m.s. Byte on HD [15:8]; A high level (VDDP) to input/output the m.s.byte on HD [7:0], Must be at GNDP if the houst data bus is 8 bits.
4	HTYPE	I	Determines the protocol type for the 8 and 16 bits modes host interface.It is allowed to be changed only during RESET.A low level (GNDP) configures the Decoder to type A, a high level (VDDP) to type B.
17,18 20,21 22,23 24,25	HD[7],HD[6] HD[5],HD[4] HD[3],HD[2] HD[1],HD[0]	3-S	For 16 bits mode, the 8 I.S. Data lines of host data bus. For 8 bits mode, only these signals are defined as host data signals.
9,11 13,15	HD[11],HD[10] HD[9],HD[8]	3-S	When HWID is connected to VDDP, these are data lines 11:8 of the 16-bit host data bus.
5,6 7,8	HD[15],HD[14] HD[13],HD[12]	3-S	When HWID is connected to VDDP, these are data lines 15:12 of the 16-bit host data bus. When HWID is connected to GNDP, these are the CD-DSPI²S input port pins as explained in the CD-DSP pin description.
27,28 29,30	HA[3],HA[2] HA[1],HA[0]	I	Host address inputs, These input signals indicate the register accessed in every cycle on the host interface.
32	HCS#	I	Host chip-select input.
31	HWR#-HR/W#	I	In host protocol Type A (HTYPE= GNDP): HR/W# This input determines the direction of the host access. In host protocol Type B (HTYPE=VDDP): HWR#. Host write input.
34	HRD#-HDS#	I	In host protocol Type A (HTYPE = GNDP): HDS#. Data strobe input (active low) In host protocol Type B (HTYPE=VDDP): HRD#. Host read input. (active low.)
36	HRDY	3-S	Host ready output. When this signal is tri-stated (i.e, is requires a pull-up resistor),up to SysConfig.CodBurstLed bytes of code can be written to the Decoder with no need to poll its condition in between.When HRDY is low during a host access,the Decoder may still receive at least two additional bytes of code without corrupting the data.
37	HIRQ#	3-S	Interrupt request. This output signal requests an interrupt from the host controller, if one of the events associated to interrupts occurs,and it is not masked-off. It is de-asserted if the host responds to the interrupt by reading the interrupt status register, or if the host disables the interrupt, or after RESET Deassertion of the HIRQ# output has two modes: De-activated and then tri-stated or directly to is a tri-state condition. The pin needs external pull-up resistor.
39	HACK#	HACK#	Host acknowledge output. In protocol A, the Decoder indicates that a read or write cycle is completed by asserting this output.In protocol B, this signal is used by the Decoder to indicate a wait state that may be used by fast hosts. In protocol B the host may ignore the HACK# signal. When this signal is deasserted it is de-activated and then tri-stated. This pin needs an external pull-up resistor.

U16 ZR36732PQC PINS DESCRIPTION - CONTINUED

Pin No.	Pin Name	Type	Description
General Purpose I/O (Host Interface)			
134	GPAIO	3-S	General purpose input/output pin,monitored/controlled by the audio processor software. After RESET, this pin is defined as input.Its definition can be configured through ADP commands.
145	GPSI	I	General purpose input, monitored by the system de-multiplexer/video processor software.
143	GPSO	O	General purpose output, controlled by the system de-multiplexer/video processor software. After RESET it outputs a low level.
DVD-DSP interface			
151	DVDREQ	O	DVD-DSP data request output (programmable polarity)
149	DVDVALID	I	DVD-DSP data valid input (programmable polarity)
148	DVDSOS	I	DVD-DSP start of sector input (programmable polarity)
159,158 157,156 155,154 153,152	DVDAT[7],[6] DVDAT[5],[4] DVDAT[3],[2] DVDAT[1],[0]	I	DVD-DSP data input bus.
150	DVDSTRB	I	DVD-DSP data bit strobe (clock) input. Programmable polarity.
147	DVDERR	I	DVD-DSP error indication input. Programmable polarity.
5 6 7 8	CDERR CDFRM CDDAT CDCLK	I	When HWID is connected to GNDP, these are the CD DSPI^{2}S input port pins as follows: CDERR: data error indication input CDFRM: left/right channel frame input CDDAT: data input CDCLK: bit clock input When HWID is connected to VDDP, these are HD [15:12] of the host data bus, as explained in the host interface pin description.
Video Syncs and Clocks Interface			
127	VCLKx2	3-S	Main video clock.27.000MHz.
92	VCLK	3-S	A division by two of the VCLKx2 signal. This signal is used as a sync qualifier.
95	HSYNC	3-S	Horizontal sync. Polarity and duration are programmable.
93	VSYNC	3-S	Vertical sync. Polarity and duration are programmable.
96	FI	3-S	Field indication. Polarity is programmable.
Analog Video Encoder Interface			
102	CVBS/G/Y (DAC A)	O	When the Decoder outputs composite video, this line is CVBS. When the Decoder outputs RGB, this line is the Green output. When the Decoder outputs YUV, this line is the Y output.
105	Y/R/V (DAC B)	O	When the Decoder outputs the composite video, this line is Y. When the Decoder outputs RGB, this line is the Red output. When the Decoder outputs YUV, this line is the V output.
106	C/B/U (DAC C)	O	When the Decoder outputs the composite video, this line is C. When the Decoder outputs RGB, this line is the Blue output. When the Decoder outputs YUV, this line is the U output.
103	CVBS/C (DAC D)	O	When the Decoder outputs any of the types of video, this line can be programmed to output either composite or C.
108	RSET	I	Resistive load for gain adjustment of the DACs
111	VREF	I	Voltage reference for gain adjustment of the DACs
100	COSYNC	3-S	Composite sync output, Active only when RGB analog output is selected. Otherwise, the signal is low.
Digital Audio Interface			
113	AIN	I	Serial input of digital stereo audio.
131	AMCLK	3-S	Audio Master Clock input/output.128, 192, 256 or 384 times the sampling frequency (programmable)

U16 ZR36732PQC PINS DESCRIPTION - CONTINUED

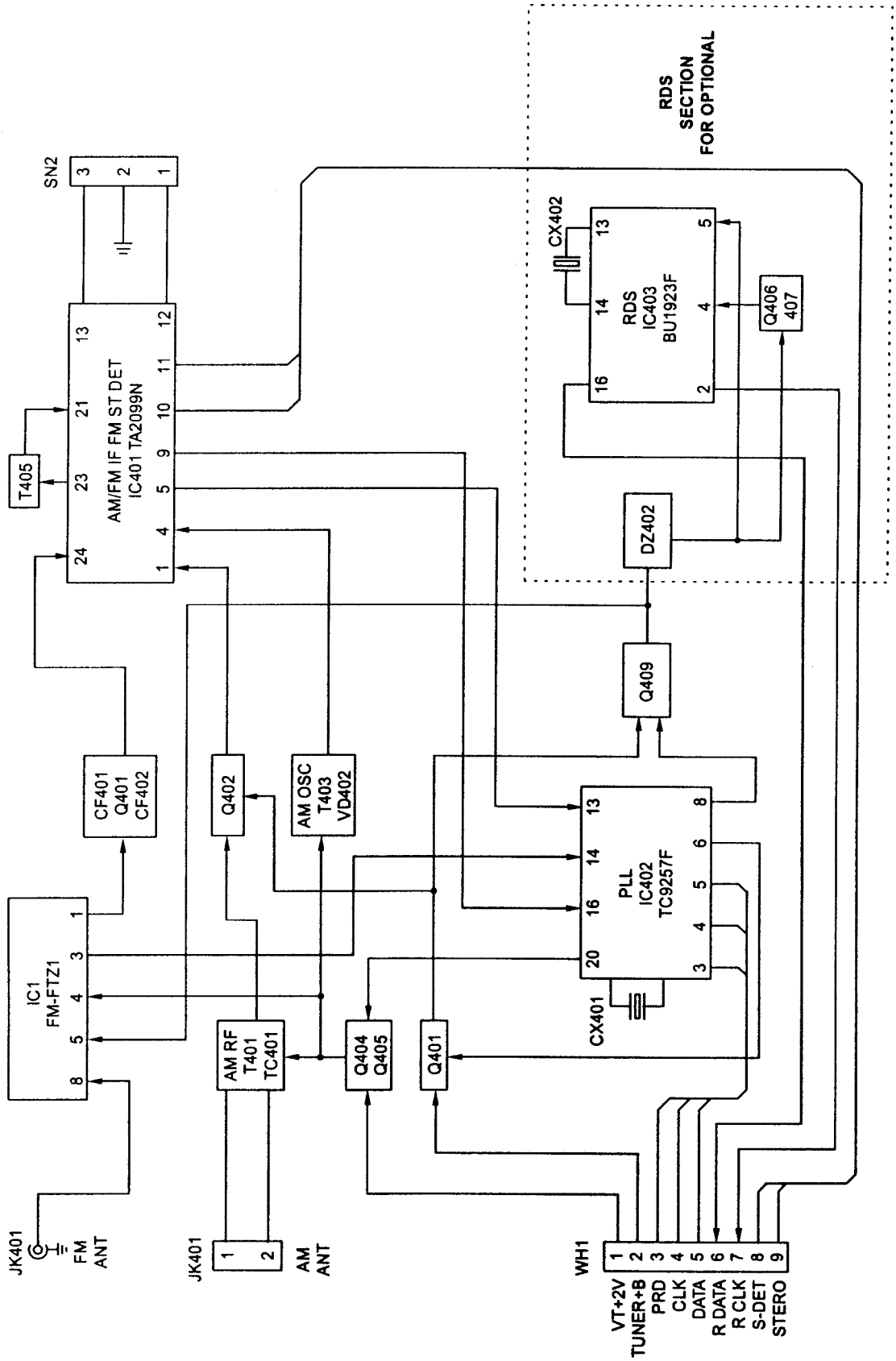
Pin No.	Pin Name	Type	Description
133	S/PDIF (AOUT[3])	O	S/PDIF transmitter output for digital coded or reconstructed audio data. Alternately can be used as a fourth audio output. After RESET this pin outputs low level.
138,137 136	AOUT[2],[1] AOUT[0]	O	Serial outputs of digital stereo audio.
139	ALRCLK	O	Digital audio left/right select output for the audio port. Square wave, at the sampling frequency.Programmable polarity interpretation for input.
141	ABCLK	O	Digital audio bit-clock output. Data on AOUT and AIN is output or latched, respectively, with the rising or falling (programmable) edge of this clock.
PLL/Clock Interface			
120	GCLK	I	27.000MHz clock or crystal input for main processing clock generation.
117	GCLK1	I	27.000MHz clock input for audio master clock generation.in normal operation must be connected to GCLK.
119	XO	O	Output to a crystal that is connected to GCLK. If a crystal is not used at GCLK, XO must be left not connected.
115 118	PLLCFG[1] PLLCFG[0]	I	PLL configuration inputs. Allowed to be changed only during RESET. In normal operation both pins must be connected to GNDP
SDRAM Interface			
90,87 84,81 78,75 72,68 70,74 76,79 82,85 88,91	RAMDAT[15], [14],[13],[12] RAMDAT[11] [10],[9],[8] RAMDAT[7],[6] RAMDAT[5],[4] RAMDAT[3],[2] RAMDAT[1],[0]	3-S	SDRAM bidirectional data bus.
55,53 54,51 48,46 43,41 42,45 47,50	RAMADD[11] [10],[9],[8] RAMADD[7],[6] RAMADD[5],[4] RAMADD[3],[2] RAMADD[1],[0]	O	SDRAM address bus output.
60	RAMRAS#	O	SDRAM row select output.
61	RAMCAS#	O	SDRAM column select output.
66	PCLK	O	SDRAM clock output (Same as internal processing clock)
64	RAMDQM	O	SDRAM data masking output.
57	RAMCS0#	O	SDRAM chip select output for the lower (or only) 2MB device (16Mbit)
59	RAMCS1#	O	SDRAM chip select output for the upper 2MB device (16Mbit).
62	RAMWE#	O	SDRAM write enable output.
Test Signal Interface			
125	SCNENBL	I	Production test pin (connected directly to GNDP in normal operation).
129	TESTMODE	I	In normal operation this pin must be connected directly to GNDP.
112	ICEMODE#	I	In normal operation this pin must be connected directly to VDDP.If it is asserted, then the ADP goes into ICE mode. In this mode 4 of the Decoder pins turn into ICE interface pins: HD[11] = TCK - ICE interface clock. HD[10] = TMS -ICE interface mode select input. HD[9] = TDO -ICE interface data output. HD[8] = TDI - ICE interface data input.
Power Signals			
10,40,49 56,64,69 80,86,97 128,146	GNDP		Digital ground of 3.3 V supply.

U16 ZR36732PQC PINS DESCRIPTION - CONTINUED

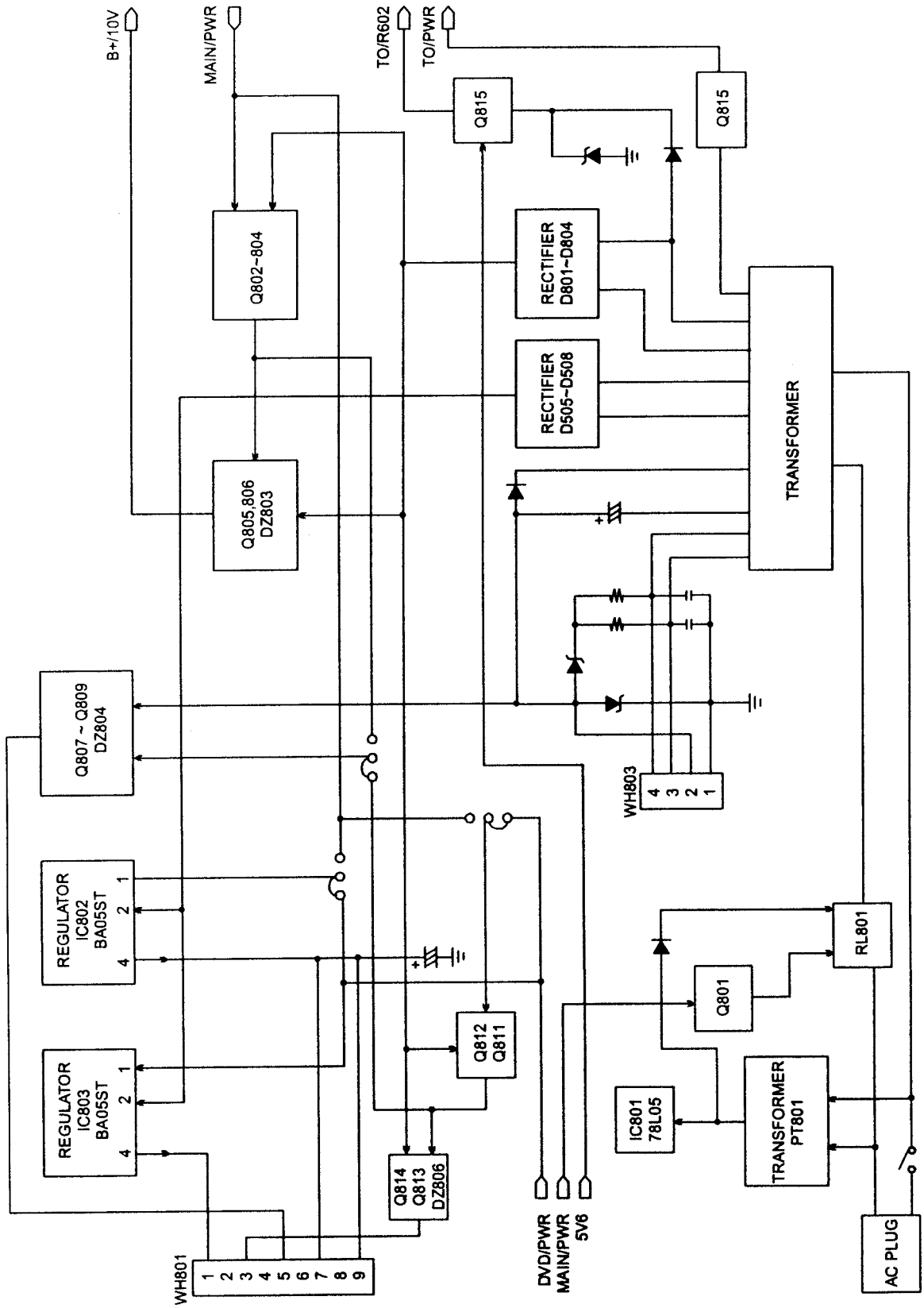
Pin No.	Pin Name	Type	Description
3,16,19,26 38,44,52,58 67,71,77,83 89,94,98,99 126,135,140	V_{DDP}		3.3V Digital power supply.
132	GNDP-A2		Digital ground of filtered 3.3V supply for AMCLK.
130	VDDP-A2		3.3 V filtered digital power supply for AMCLK.
14,35,73 114,144	GNDC		Digital ground of 1.8 V supply.
12,33,63 116,142	VDDC		1.8 V Digital power supply
123	GNDA		Ground plane of infernal PLL circuit.
121	VDDA		1.8 V Power supply for internal PLL circuit.
104	VDDDAC		3.3 V Analog power supply for the DACs.
101 107 109 110	GNDDAC_D GNDDAC_B GNDDAC_P GNDDAC_S		Grounds for the DACs 3.3V analog power supply

BLOCK DIAGRAMS

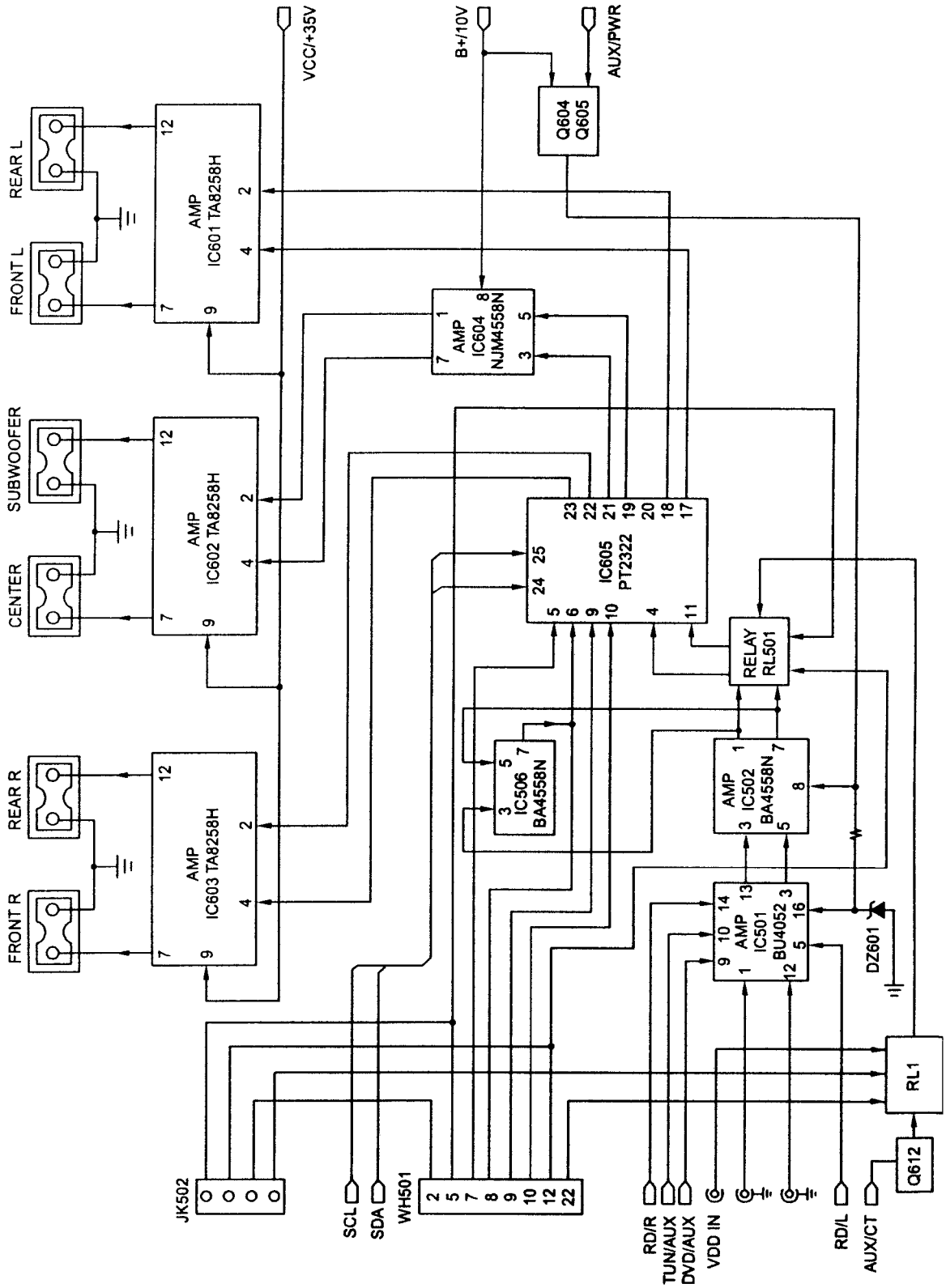
TUNER SECTION



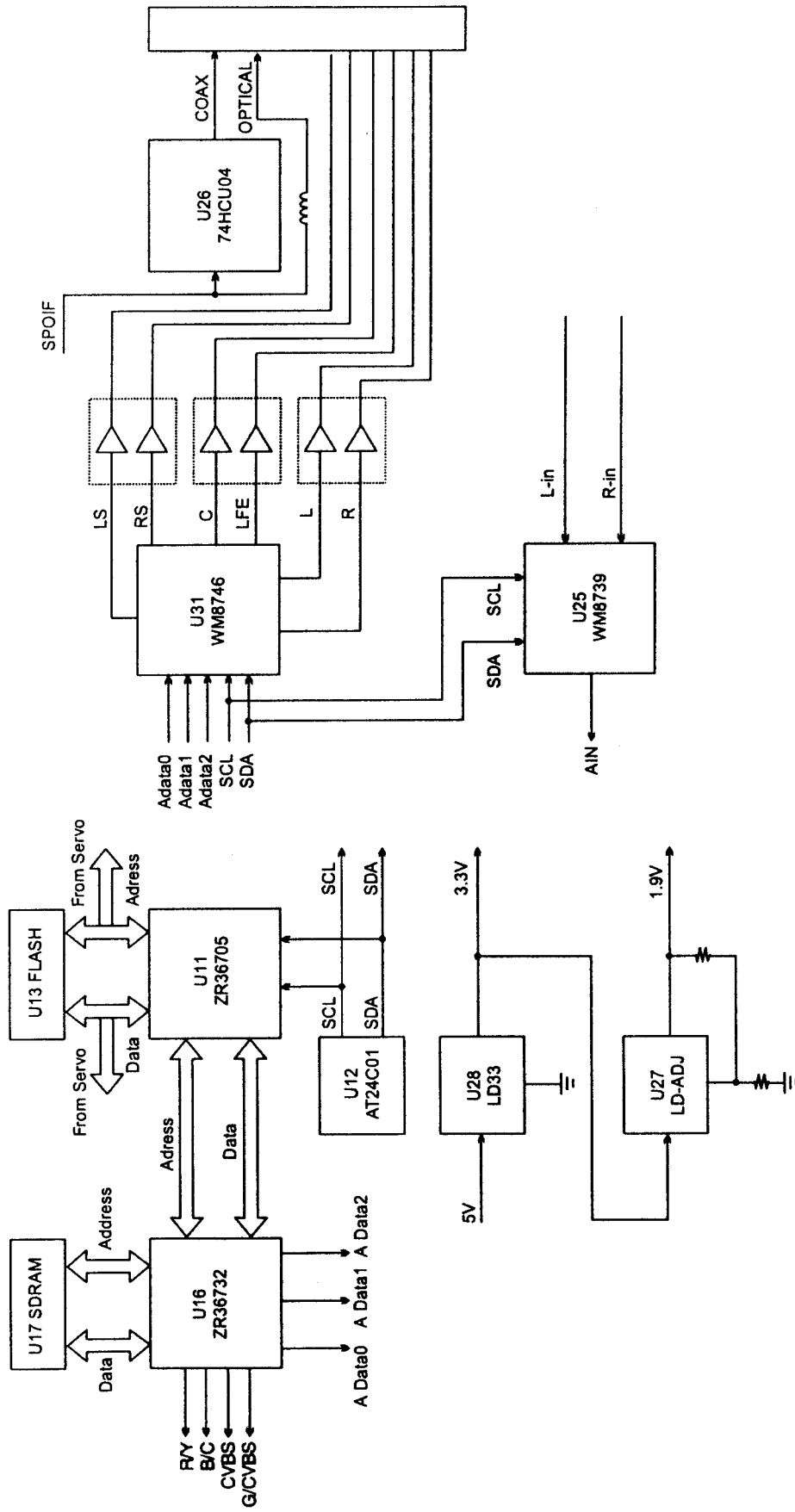
POWER SUPPLY SECTION



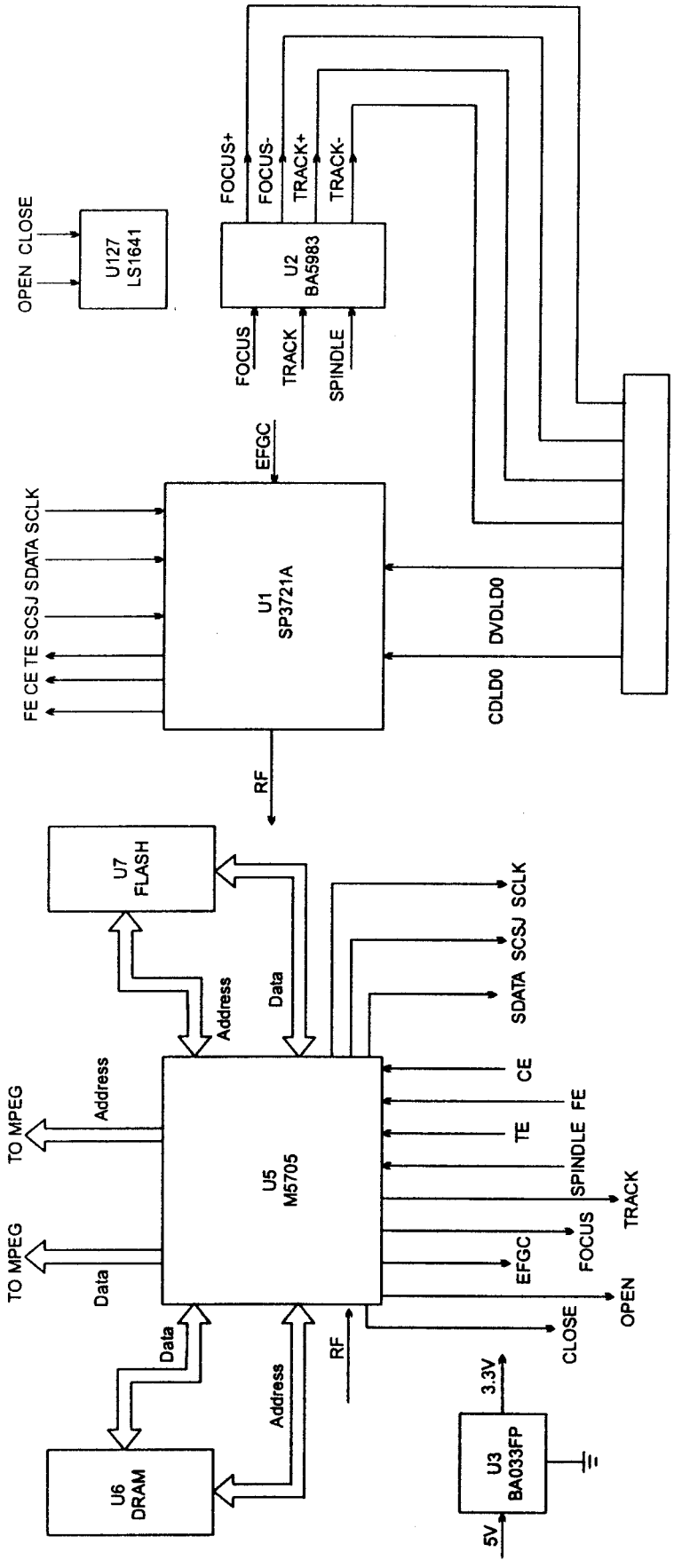
POWER AMP. SECTION



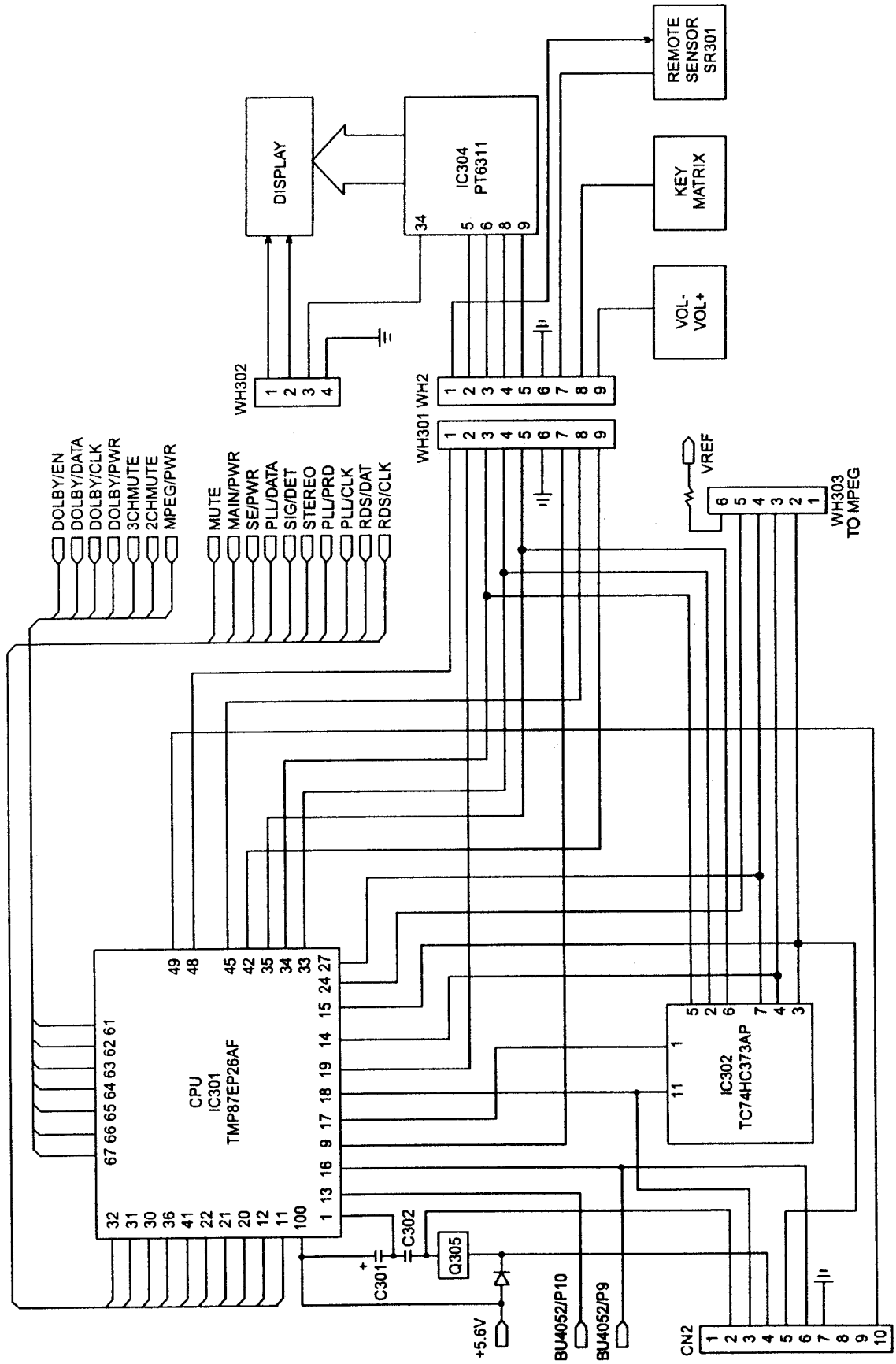
MPEG SECTION



SERVO SECTION



CPU & CONTROL SECTION



EXPLODED DRAWING & MECHANICAL PARTS LIST

Ref. No.	Description		Mfr's Part No.	Qty.
MAIN UNIT				
1	DVD DOOR, MIRROR LENS, w/PNT		512-ST2612-xxx	1
2	(X) DISPLAY LENS, MIRROR LENS, w/PNT		512-ST2608-xxx	1
3	VOLUME KNOB, MOLD L GR(CNS-0360) (ABS) CAV:1 w/SPY		510-ST2507-xxx	1
4	VOLUME KNOB BRACKET, CAV.1 (ABS)		505-ST2509-000	1
5	RUBBER FOOT, 10x10x2.0mm BLACK (NC RUBBER),	2/BTM CAB	700-630141-000	4
	w/SELF-ADHESIVE	2/FRONT PANEL		
6	FRONT PANEL, CNS-0360 (HIPS), w/PNT		500-ST2501-xxx	1
7	CONTROL KNOB, MOLD CNS-0360 (ABS) CAV:7, w/SPY & PNT		510-ST2533-xxx	7
8	CONTROL KNOB BRACKET, CAV.1 (ABS)		505-ST2505-000	1
9	VFD-2COL100x20.5SM-033P VACUUM FLUORESCENT DISPLAY		115-001002-000	1
	#VFD20-1002 (ZEC)			
10	LED BRACKET, MOLDED BLACK CAV.4 (ABS)		505-ST2217-000	1
11	DISPLAY PCB STS21AAST-01-03 202x174.5x1.6mm/4 (94HB)		033-STS21A-102	1
12	VOLUME LENS, MOLD T.BLUE (80355) (SAN) CAV:4		500-ST2521-000	1
13	REMOTE SENSOR LENS, MOLD T.GREY(J-52858) (SAN) CAV:4		500-ST2519-000	1
14	SPRING ARM, CAV.4 (POM)		509-ST2208-000	1
15	REMOTE SENSOR BRACKET, CAV.1 (ABS)		505-ST2511-000	1
16	SUPPORT BRACKET, CAV.1 (ABS)		505-ST2237-000	1
17	POWER KNOB, MOLD CNS-0360 (ABS), CAV:1 w/SPY		510-ST2506-xxx	1
18	POWER KNOB BRACKET, CAV.1 (ABS)		505-ST2532-000	1
19	POWER KNOB ADAPTOR, 1.0mm E.G. STEEL		603-ST2218-000	1
20	POWER SWITCH BRACKET, 1.0mm E.G.STEEL		605-ST2220-000	1
21	PUSH SWITCH 2P2T PS3-22SP-W4CW-3.2,		021-032222-000	1
	w/UL.VDE SEMKO APPROVAL (LUP FUNG)			
22	MOUNTING BRACKET ST21-15 T=1.2mm E.G. STEEL		605-ST2115-000	1
23	POST, CAV.1 (ABS)		503-ST2238-000	1
24	FAN COVER, CAV.4 (ABS)		500-ST2108-000	1
25	BACK PLATE, 0.3mm BLK PVC, w/PNT, w/ZONE 2/SCART/CE,		650-ST2133-xxx	1
	w/o PAL/NTSC HOLE			
26	COOLING FAN, DC BRUSHLESS #MW-510H12S-3, 50x50x10mm		100-090012-003	1
27	PCB BRACKET D, CAV.2 (ABS)		505-ST2226-000	2
28	FUSE PCB STS21AAST-01-07 166x132x1.6mm/12 (94V0)		033-STS21A-106	1
29	BOTTOM CABINET, T=0.8mm E.G.STEEL		600-ST2225-000	1
30	PANEL BRACKET, 1.2mm E.G.STEEL		605-ST2223-000	1
31	DVD DOOR (2), MOLD BLACK (FOR MIRROR LENS VERSION)		500-ST2603-000	1
32	MECHANISM BRACKET (B), CAV.2 (ABS)		505-ST2213-000	2
33	MECHANISM BRACKET (A), CAV.2 (ABS)		505-ST2212-000	2
34	PCB BRACKET (C), CAV.1 (ABS)		505-ST2216-000	1
35	PCB BRACKET (B), CAV.4 (ABS)		505-ST2215-000	4
36	PCB BRACKET (A), CAV.4 (ABS)		505-ST2214-000	4
37	MAIN PCB STS21AAST-01-01 396x300x1.6mm/2 (94V0)		033-STS21A-200	1
38	MPEG+SERVO PCB STS21AAST-01-02 150x120x1.6mm (FR4)		033-STS21A-101	1
39	(F550-266422-000) MOUNTING BRACKET, MOLED NATURAL,		505-266422-000	1
	CAV.8 (ABS)			
40	HEATSINK, 0.5mm TIN PLATE		613-DV3231-000	2
41	TUNER PCB STS21AAST-01-04 141x130x1.6mm/3 (94V0)		033-STS21A-103	1
42	MOTOR DRIVER PCB STS21AAST-01-12 180x100x1.2mm/20 (94HB)		033-STS21A-110	1
43	THERMAL RESISTOR PRESS PLATE, 0.3mm THK		650-DV3238-000	1
	PHOSPHROUS BRONZE			
44	TOP PANEL, T=0.8mm E.G.C. STEEL, w/SPV		600-ST2224-xxx	1

EXPLODED DRAWING & MECHANICAL PARTS LIST - CONTINUED

Ref. No.	Description		Mfr's Part No.	Qty.
45	POWER TRANSFORMER		123-xxxxxx-xxx	1
46	BLANK PCB STS21AAST-01-08 197x46x1.6mm/9 (94V0)		033-STS21A-107	1
47	HEAT SINK (FOR 15W), 2.0mm ALUMINUM		613-DV3242-000	1
48	HS&-EXT-AL&-005W-0C FIRM VOLTAGE HEATSINK (EXTROUDE AL)		613-ST2112-000	1
49	SCART PCB STS21AAST-01-05 140x95x1.6mm/4 (94V0)		033-STS21A-104	1
50	RGB CONNECTOR SOCKET 21 PINS HRC-021V-07,	JK701	135-HRC021-210	1
	(KUNMING)/MRC-021V-04(HONDA)			
51	POWER TRANSFORMER		123-xxxxxx-xxx	1
	SCREW 3x6mm BB T.T.S. (S TYPE) NI PLATED (TSB#9878107200)		722-080308-060	10
	METAL WASHER Ø3.2xØ8x0.5mm	2/MAIN PCB	532-203208-050	2
	METAL WASHER 3.5x10x0.5mm	1/MAIN PCB	532-203510-050	1
	FIBRE WASHER DIA:3.2x8x1	4/MAIN PCB	532-303208-100	4
	SPRING WASHER 4mm BLACK	6/TF TO BOTTOM CAB	532-404000-000	6
	REMOTE SENSOR SHIELDING PLATE, 0.1mm	1/REMOTE	650-ST2123-000	1
	COPPER PLATE (SELF ADHESIVE)			
	SHIELDING PLATE A, 0.1mm COPPER PLATE (SELF ADHESIVE)		650-ST2125-000	1
	SHIELDING PLATE B, 0.1mm COPPER PLATE (SELF ADHESIVE)		650-ST2126-000	1
	SHIELDING PLATE C, 0.1mm COPPER PLATE (SELF ADHESIVE)		650-ST2127-000	1
	RUBBER FOAM 16x12x10mm	2/MAIN PCB	700-000005-003	2
	RUBBER FOAM, 25x18x15mm THK w/DOUBEL SIDE TAPE	2/MAIN PCB	700-026849-000	2
	RUBBER PAD, S:7.0x4.8x2.5mm, w/ADHESIVE (RUBBER)		700-079329-000	2
	CD DOOR STOPPER CUSHION, 7x4x2mm (NBR)	1/SERVO PCB	700-139126-000	1
	RUBBER (TRANSFORMER) 10x10x5.5mm,	4/TF	700-DV3237-000	14
	w/N500(B) 30 MBR	10/MAIN PCB		
	HEATSINK INSULATOR, 0.25mm 25x10mm		700-DV3243-000	1
	FELT B, 50x15x0.3mm HIMERON w/SONY T-3500 2-SIDED TAPE		700-SDC019-001	5
	(T#9871858900)			
	FOAM CUSHION, 1.5mm EVA		700-ST2113-000	1
	FELT CLOTH, 13x10x0.5mm FELT CLOTH w/ADHESIVE		700-ST2114-000	1
	SEPARATOR, T=0.3mm PVC PLATE w/DOUBLE-SIDE ADHESIVE		700-ST2124-000	1
	HEATSINK INSULATOR, 1.0mm FIBRE PAPER (94HB)	1/HEATSINK TO PCB	700-ST2129-000	1
	CONTROL PCB SHIELD PAPER FIBRE PAPER		700-ST2131-000	1
	DIFFUSOR R, D207 18x8.5mm		700-ST2229-000	1
	RUBBER PAD (DISPLAY) 10x5x3.8mm (NC) RUBBER,		700-ST2522-000	2
	w/SELF ADHESIVE			
	SCREW ST3x6mm, PB BRASS BASED		720-050300-060	1
		1/POWER KNOB TO POWER KNOB BKT		
	SCREW ST3x8mm, PB BRASS BASED	11/ELE PARTS TO BTM CAB	720-050300-080	11
	SCREW ST2x4mm, BB (4 HEAD) BRASS BASED	2/VOLUME LENS TO FR CAB	720-110200-040	2
	SCREW ST3x6mm, BB BRASS BASED		720-110300-060	2
		1/SUPPORT BKT TO BTM BKT		
		1/F.PANEL BKT TO SUPPORT BKT		
	SCREW ST3x8mm, BB HEAD V5.9-6.3,	5/FR PCB TO FR CAB	720-110300-080	17
	BB BRASS BASED	2/MOUNTING BRACKET		
		1/BOTTOM CABINET TO POST		
		1/SPRING ARM TO VOLUME KNOB		
		8/SERVO PCB TO PCB BRACKET A		
	SCREW M3x6mm, PM	1/BTM CAB TO PANEL BRKT	721-010300-060	1
	SCREW 3x8mm, PM BRASS BASED	6/AMP. IC TO HEATSINK	721-010300-080	6
	SCREW 4x8mm, PM	6/TF TO BTM CAB	721-010400-080	6
	SCREW 3x24mm PB T.T.S.	4/MECHANISM TO BTM CAB	722-020300-240	4

EXPLODED DRAWING & MECHANICAL PARTS LIST - CONTINUED

Ref. No.	Description	Mfr's Part No.	Qty.
	SCREW 3x6mm FLAT HEAD B TYPE T.T.S. NI-PLATED 1/GROUNDING TO HEATSINK	722-060307-060	2
	1/THERMAL RESISTOR PRESS PLATE TO HEAT SINK		
	SCREW 3x6mm BB T.T.S. (PTB 3x6NI)	722-080300-060	2
	2/FFC CABLE PCB TO HEATSINK		
	SCREW ST3x8mm BB T.T.S. (B TYPE) 2/HS PCB	722-080307-082	6
	CBTS(P)-Z CHROMATE PLATING CBTB 3x8 MC) 4/POWER IC TO HEATSINK		
	SCREW 3x6mm BB T.T.S. (S TYPE) NI PLATED (TSB#9878107200)	722-080308-060	4
	2/POWER SWITCH BKT TO BTM CAB		
	2/POWER SWITCH TO POWER SWITCH BKT		
	(F722-080308-182) SCREW 3x18mm BB T.T.S. (S TYPE) 4/FAN COVER TO BTM CAB	722-080308-180	4
	SCREW 3x38mm BB T.T.S. (S TYPE) 2/SOCKET PCB TO BTM CAB	722-080308-380	2
	SCREW 3x15mm BM T.T.S. (S TYPE) NI PLATED	722-100308-150	4
	4/PCB STS2xAAST-01-01 TO BTM CAB		
	NUT M3x0.5 PITCH Ni 6/AMP. IC TO HEATSINK	725-000030-500	6
	NUT M4 6/TF TO BTM CAB	725-000040-000	6
	SPONGE, SIZE:15mmx15mmx10mm	700-0228A3-000	1
	4" CABLE/PLASTIC TIE (SKB-1M/CV-100)	727-000100-000	4
	PVC TUBE AWG5 INNER DIA:4.72mm, UNIT"M"	728-000047-001	0.22
	(DAE CHANG/TAE IK) (UL/CSA APP.)		
	PVC TUBE AWG1 INNER DIA. 7.35mm DC-3 UNIT"M"	728-000073-000	0.125
	(DAE CHANG) (UL/CSA APP.) TRANSPARENT		
	PVC HEAT SHRINKABLE TUBE DIA. 3mm (UNITUBE), UNIT"M"	728-015030-001	0.057
	(UL/CSA APP)		
	PVC HEAT SHRINKABLE TUBE DIA.3.5mm (UNITUBE), UNIT"M"	728-015035-000	0.11
	(UL/CSA APP)		
	4" CABLE/PLASTIC TIE (SKB-1M/CV-100)	727-000100-000	2
	FUSE HOLDER, HTF-015	550-790000-000	6
DVD MECHANISM PORTION			
1	DRIVE GEAR, MOLDED BLACK CAV.2, POM M90 94HB	509-CD3205-000	1
2	LM BELT CDD-40B MOLD BLK DIA:28x1.85x1.85,	700-0CDD40-002	1
	LOY-BELT-CR MOTOR BELT (RUBBER)		
3	PULLEY GEAR, MOLDED BLACK CAV.4, POM M90 94HB	509-CD3206-000	1
4	CHUCK YOKE, MOLDED BLACK CAV.2 (ABS)	509-DVD302-000	1
5	SLIDER, MOLDED BLACK CAV.2 (ABS)	509-CD3204-000	1
6	CHASSIS, MOLDED BLACK CAV.1 (ABS)	509-CD3202-000	1
7	LEAF SWITCH LS-121-0A (LUP FUNG)	022-001210-001	1
8	TRAY, MOLDED BLACK CAV.1 (ABS)	509-CD3201-000	1
9	(F700-0CDD18-000) MOTOR PULLEY, MOLDED BLACK,	509-0CDD18-000	1
	POM M90 94HB CAV:6 (POM)		
10	MOTOR-DC-006V-NORMAL 6V #RF-500TB-12560 (MABUCHI),	151-061256-000	1
	10gm (KSM-2101-ABM-AL)		
11	LOAD MOTOR PCB STS21AAST-01-09 171x88.5x1.6mm/12 (94V0)	033-STS21A-108	1
12	SPRING PLATE, 0.2T S.S.	650-CDD307-000	1
13	CHUCK PLATE, DIA:19.9/DIA:3.5x0.8 ELECTROLYTIC ST.PLATE	650-DVD303-000	1
14	CD MECHANISM HOLDER, MOLDED NATURAL, CAV.2 (ABS)	505-CD3203-000	1
15	CHUCK PULLEY, MOLDED BLACK CAV.2 (ABS)	509-DVD301-000	1
16	FFC CABLE HOLDER, MOLDED BLACK, CAV.4 (ABS)	505-CD3210-000	1
17	DVD-FLC-01-SAMG-N DVD MECHANISM FOR CD-R,	163-000216-000	1
	CMS-S21MG6 (SAMSUNG)		
18	DVD CUSHION, GR HARDNESS 50+-2 DURO BLACK	700-DVD304-000	4
19	METAL BRACKET, 1.0 THK E.G.STEEL	605-CD3211-000	1

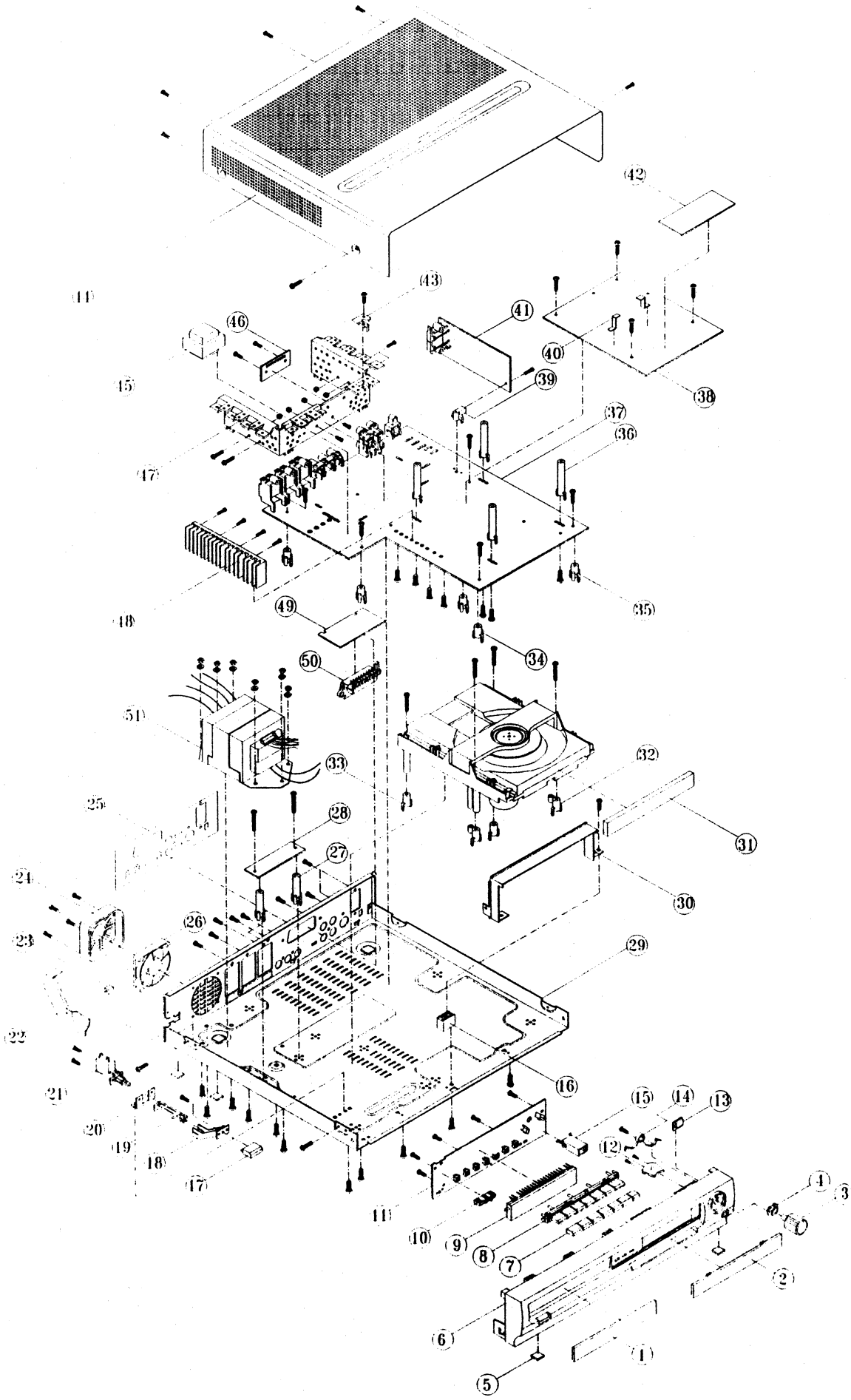
EXPLODED DRAWING & MECHANICAL PARTS LIST - CONTINUED

Ref. No.	Description	Mfr's Part No.	Qty.
	SCREW ST2.6x10mm, BB BRASS BASED (P TYPE)	720-110260-100	2
	METAL WASHER DIA:2.8/DIA:9.5x0.5mm	532-202809-550	1
	PLANE WASHER DIA:2.8xDIA:7x0.5mm 2/MOTOR-CHASSIS	532-202807-050	2
	METAL WASHER DIA:2.8/DIA:9.5x0.5mm 4/DVD-CHASSIS	532-202809-550	4
	PVC WASHER Ø10xØ6.05x0.1mm, K890-43 1/SET	532-510006-010	1
	FOAM RUBBER, 6x5x4.5mm (HARDNESS 60 PAD CORD)	700-0CDD48-001	1
	SHIELD (MABUCHI 53-192AB)	700-0CDD50-000	1
	HEATSINK SPACER, 50x6x2mm INOAC RUBBER SPONGE 1.4PCS/SET	700-D15669-000	1.4
	C-4305 (BLK) w/TAPE		
	SCREW ST2x5mm PB BRASS BASED (M2.3 HEAD) 1/LEAF SW	720-050200-050	2
	1/SPRING PLATE		
	SCREW 2.6x5mm PM w/CHROMATE-PLATING 2/MOTOR-CHASSIS	721-010260-052	2
	SCREW 2.6x10mm BB T.T.S. (P TYPE)	722-080260-102	6
	CHROMATE PLATING (BTTB2.6x10MC)		
	4" CABLE/PLASTIC TIE (SKB-1M/CV-100)	727-000100-000	1
CENTER SPEAKER PORTION			
1	SPEAKER CLOTH #FP-662-0WT (SILVER GREY) (230x160mm)	662-0FP662-000	0.0252
	WIDTH:60"-62" UNIT"YD"		
2	SPEAKER CLOTH MESH, CAV.2 (HIPS)	509-SQC303-000	1
3	SPEAKER PANEL, MOLD CNS-0360 (HIPS) w/SPY	500-SQC301-xxx	1
4	SPK00003"006OHM0030W w/BK DOME PAPER CAP	131-308030-012	1
	#LF77SZ4309G50C8AS16CD8		
5	HOLE COVER, MOLD CNS-0360 (HIPS) CAV:8	500-SSQ104-000	2
6	SPEAKER CABINET, MOLD GREY (CNS-0360) (HIPS) w/ENGRAVING	500-SQC102-000	1
7	PUSH TERMINAL BOARD, BLACK, RED MSP-105H03 BLACK, RED	118-000213-000	1
	SPEKAER GASKET, 1.5 THK FOAM RUBBER	700-SQC204-000	1
	SCREW ST3x20mm, PAB BRASS BASED 4/CAB-SPK PANEL	720-010300-200	4
	SCREW ST3x8mm, BB HEAD V5.9-6.3, BB BRASS BASED	720-110300-080	2
	2/PUSH TERMINAL BOARD-SP CAB		
	SCREW ST3x10mm BB HEAD V5.9-6.3 BRASS BASED 4/SPK-SPK PANEL	720-110300-100	4
SUB-WOOFER PORTION			
1	SPEAKER CLOTH #FP-662-0WT (SILVER GREY) WIDTH:60"-62"	662-0FP662-000	0.07
	FOR SUB-WOOFER (320x320mm)		
	UNIT"YD"		
2	SPEAKER MESH, MOLDED BLACK CAV.2 (HISP) REV.1	509-299973-001	1
3	SPK006.5"006OHM0060W w/BK DOME PAPER CAP	131-656060-011	1
	#LW165KZ5804G70F6A26PDB K0626		
4	SPEAKER BOX, S:220x380x240mm, SIL PVC MOKU ME-2907,	660-SWT105-xxx	1
	w/SPY (15W)		
5	SPEAKER POST ADAPTOR, MOLDED NATURAL, CAV.8 (ABS)	503-650127-000	6
6	SUB-WOOFER TUBE, MOLD L.GREY(CNS-0360) (HIPS) CAV:4	509-SWT202-000	1
7	SUB-WOOFER PANEL, MOLD CNS0360 (HIPS) w/SPY, w/o PNT	500-SWT101-xxx	1
	SOUND TUBE GASKET, DIA:68x1.5mm EVA	700-SWT213-000	1
	WOOD SCREW ST3x10mm PWA CHIT BOARD, 4/SPK	720-180300-100	4
	W=7mm BRASS BASED		
	WOOD SCREW ST3x12mm BA CHIT BOARD 4/TUBE	720-190300-120	10
	6/SPK POST ADAPTOR		
4-SPEAKER PORTION			
1	SPEAKER CLOTH #FP-662-0WT (SILVER GREY) (200mmX160mm)X4PCS/SET	662-0FP662-000	0.0875
	WIDTH:60"-62" UNIT"YD"		
2	SPEAKER CLOTH MESH, CAV.4 (HIPS)	509-SSQ303-000	4

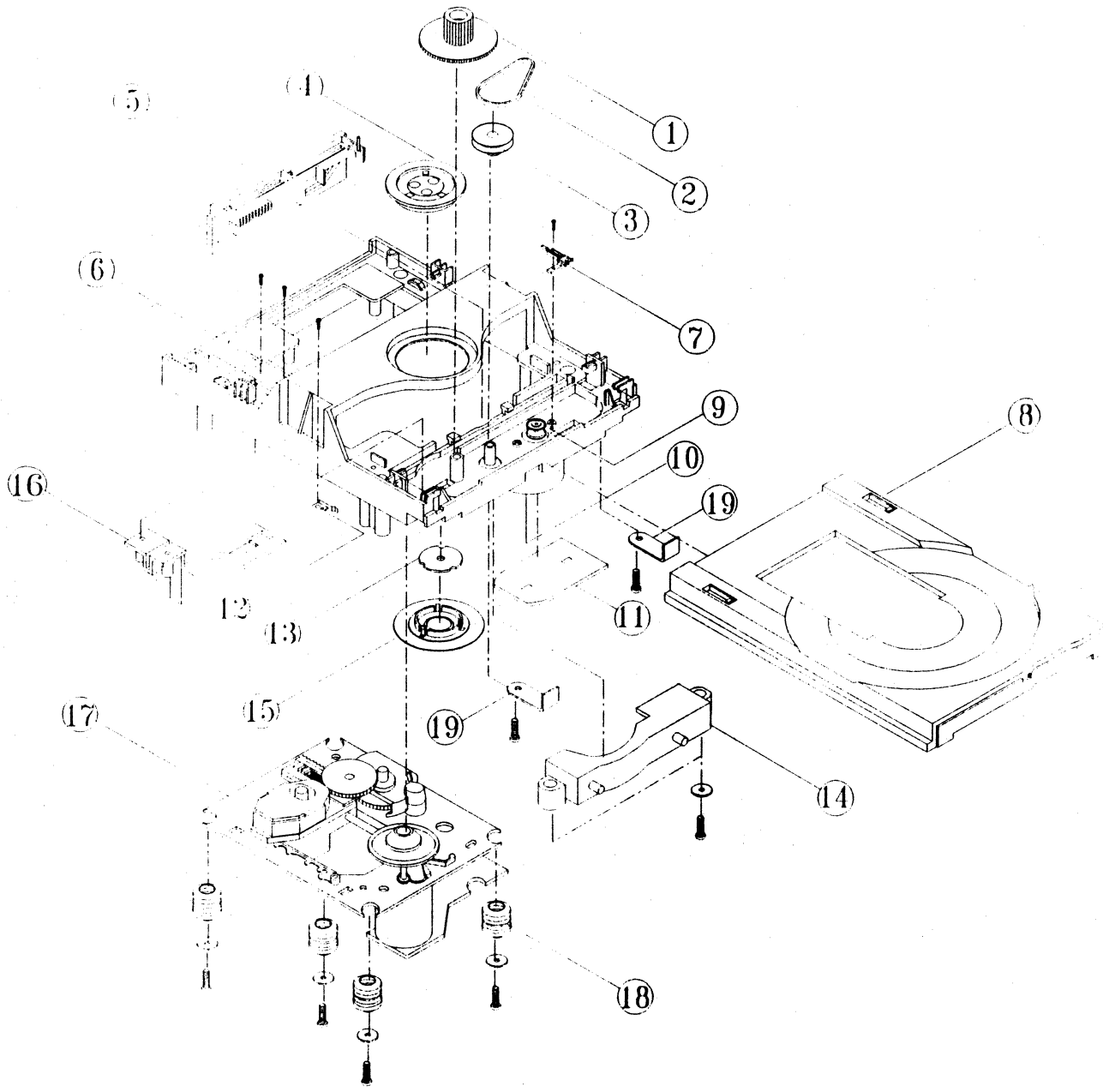
EXPLODED DRAWING & MECHANICAL PARTS LIST - CONTINUED

Ref. No.	Description	Mfr's Part No.	Qty.
3	SPEAKER PANEL, MOLD CNS-0360 (HIPS) w/SPY	500-SSQ301-xxx	4
4	SPK00003"008OHM0030W w/BK DOME PAPER CAP	131-308030-012	4
	#LF77SZ4309G50C8AS16CDB		
5	HOLE COVER, MOLD CNS-0360 (HIPS) CAV:8	500-SSQ104-000	4
6	SPEAKER CABINET, MOLD GREY(CNS-0360) (HIPS) w/ENGRAVING	500-SSQ102-000	4
7	PUSH TERMINAL BOARD, BLACK, RED MSP-105H03 BLACK, RED	118-000213-000	4
	FELT B, 50x15x0.3mm HIMERON 4/SET	700-SDC019-001	4
	w/SONY T-3500 2-SIDED TAPE (T#9871858900)		
	SCREW ST3x35mm, PAB (M3.5 HEAD) BRASS BASED 16/CAB-SPK PANEL	720-010300-350	16
	SCREW ST3x8mm, BB HEAD V5.9-6.3, BB BRASS BASED	720-110300-080	8
	8/PUSH TER. BOARD-SPK CAB		
	SCREW ST3x10mm BB HEAD V5.9-6.3 BRASS BASED 16/SPK-SPK PANEL	720-110300-100	16

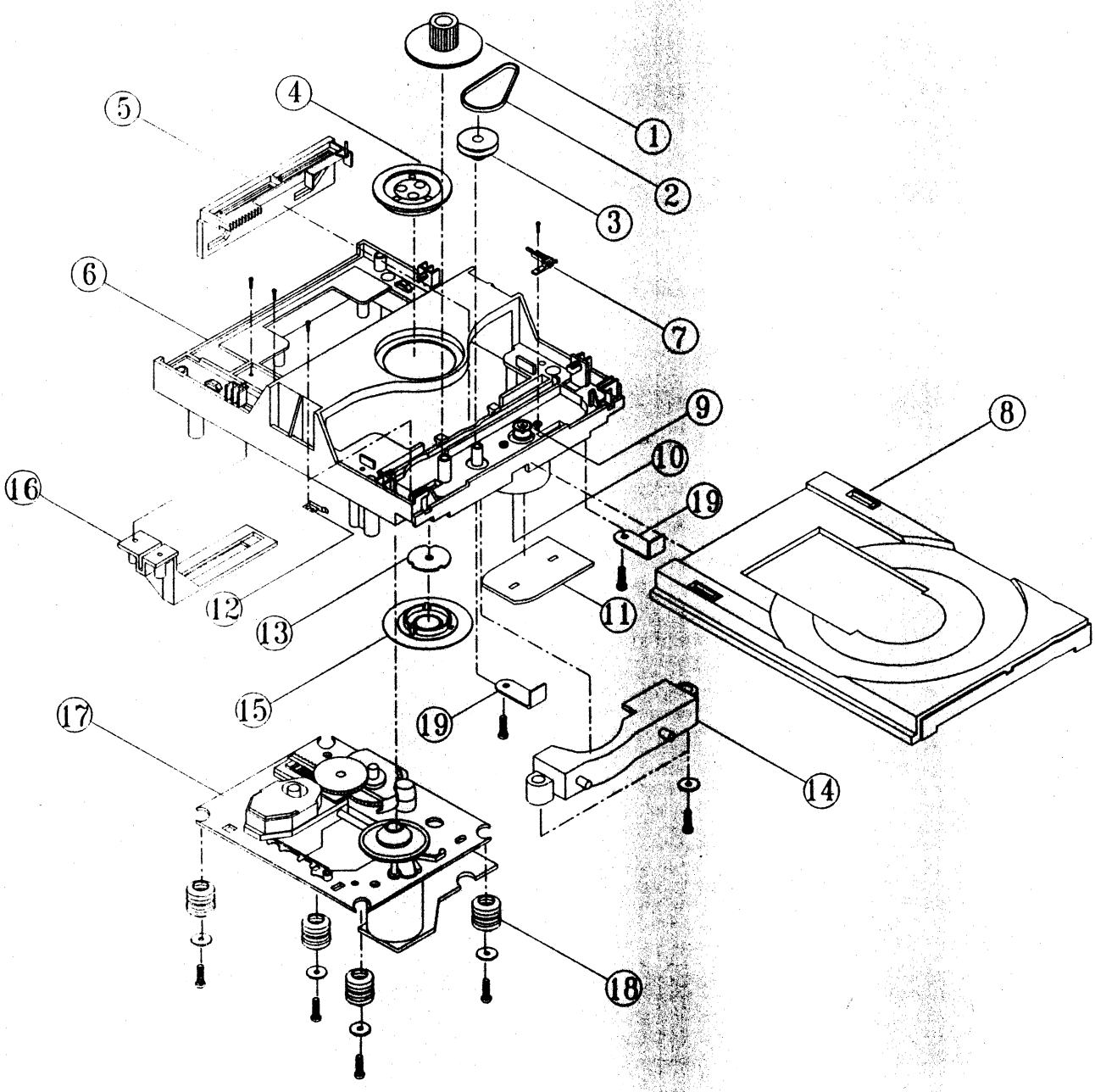
EXPLODED DRAWING - MAIN UNIT



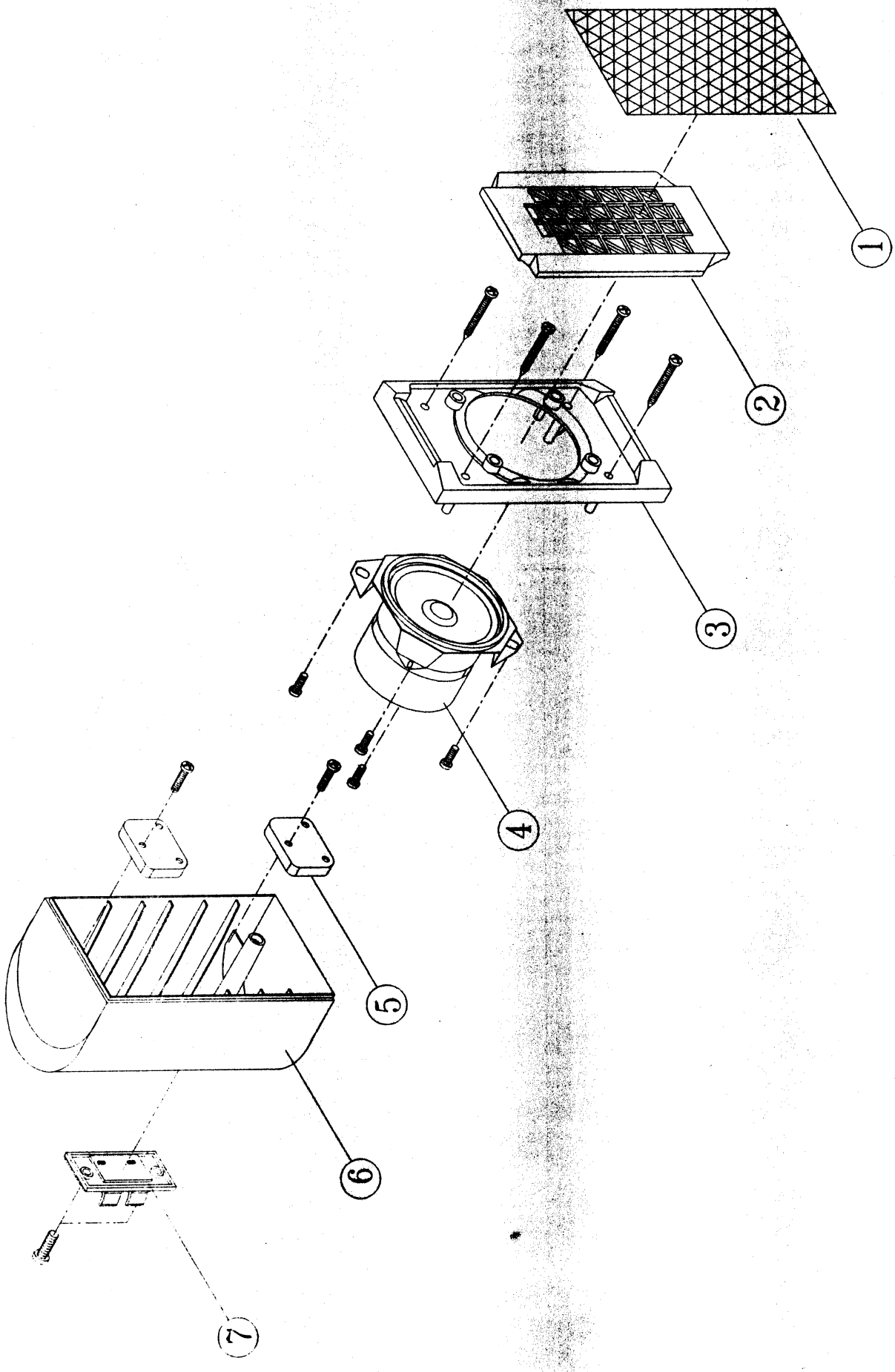
EXPLODED DRAWING - DVD MECHANISM PORTION



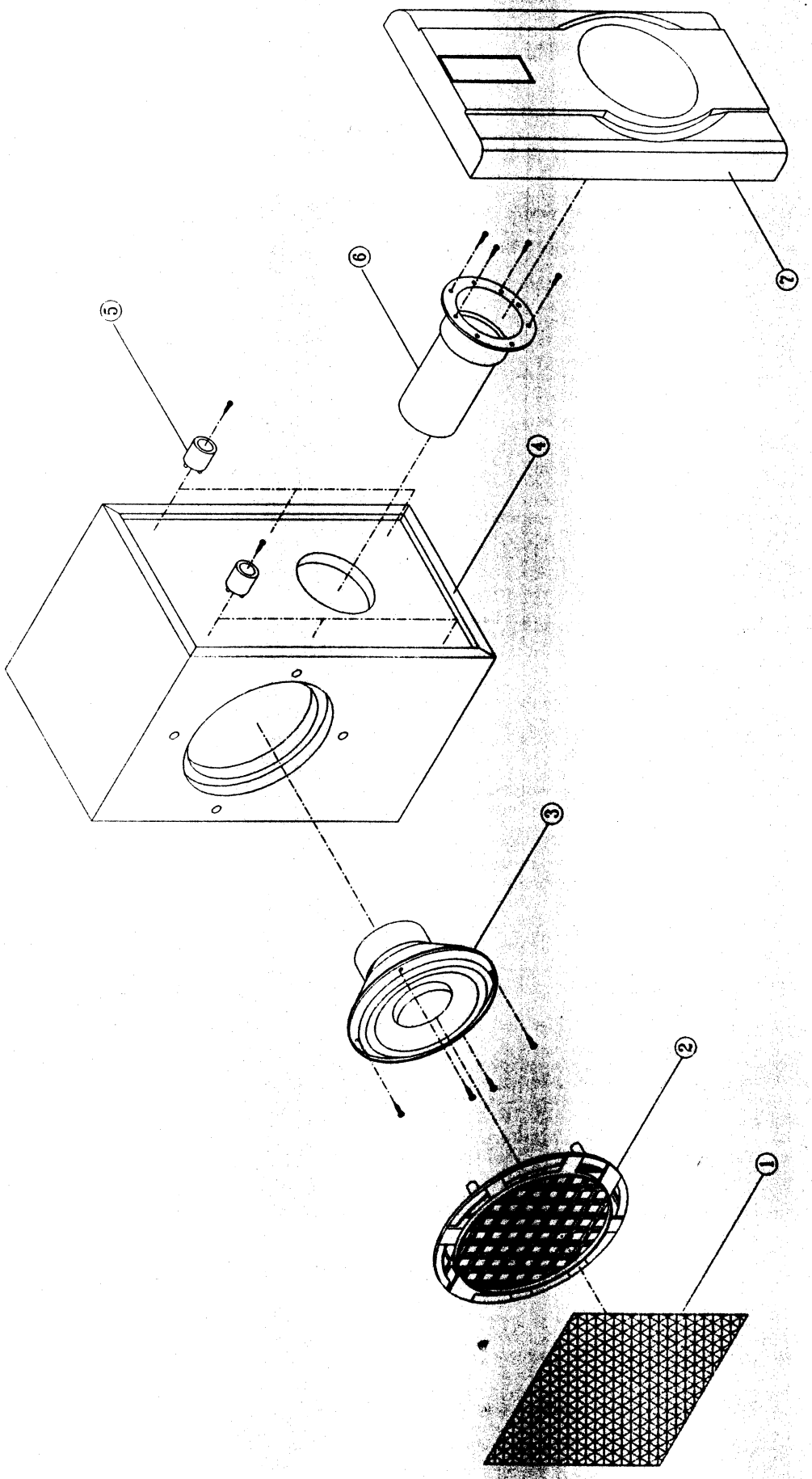
EXPLODED DRAWING - DVD MECHANISM PORTION



EXPLODED DRAWING - CENTER SPEAKER PORTION



EXPLODED DRAWING - SUB-WOOFER PORTION



EXPLODED DRAWING - 4-SPEAKER PORTION